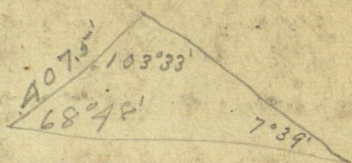


80.

MINING
TRANSIT BOOK

363

W.



Portage Lake

$$\begin{array}{r}
 103^{\circ}33' \\
 68^{\circ}48' \\
 \hline
 171^{\circ}81' \\
 172^{\circ}21' \\
 \hline
 7^{\circ}39'
 \end{array}$$

John W. Cress
 Aug 1-1915

36
 700
 1300
 122
 179060
 270941
 152016
 19500

Index

(1)

Notes of subdivision of Sec 1-137-31

by J.A. Jonston

Pages 1 to 32

Horst on Co road in Sec. 26-141-31, P 33 to 38

Horst for Harzickins ^{Sec. 36} 142-30-31-1916 40 to 54

secs. 25-26-141-31 & 30-141-30. 1920 94 to 144.

E.L. Tusler on Twp. Rd. 141-31. 145-160

Book No. 80 Full.

For balance of Notes, of secs.
25-26-141-31 and 30-141-30

See F.B. # 178. E.B.H.

(2)

Dec 1-137-31

Sec 1-137-31.

Aug 4th

Geo. W. Miller transitman

by Walker 9.28 via M&I fare to Pine
River 67^{cts} arriving at 10.39 A.M.

by Pine River 11.00 with Mr. Fred Moulton
and auto.)

Go to N.E. Cor Sec 1-137-31 and
start survey. See notes call
for B.T.^s as follows

4

1-137-31

Nov. 3, 1915 - J.A. Johnston transitman
 bureau and I work in office
 going over old field notes and
 searching old field books for
 previous surveys of section
 1-137-31. In order to re-locate
 several cor. now missing

Nov 4, 1915-

J.A. Johnston

Rearr Walker for Pine River
 via M&T at 9.25 fare = 67.^{cts}
 Ar. Pine River 10.39. Dinner at Pine
 River 25.^{cts}

Liam for Bungo turf with Jno Moulster
 at 12.30 Auto hire \$2.50

Visit home of Mr Wagerman but
 unable to get lodging there.
 I then try Mr Heninger and
 also Caswell but find no
 one at home. Mr Isaac Rowan
 agrees to board and lodge
 me until I am able to
 make other arrangements.
 J.A. Johnston

Nov 5, 1915-

J.A. Johnston Transit & chain

J.H. Heminger Chain flag & axe.

Walked to N.W. cor of
section 1-137-31 where J.W. Euro
set post several years ago to
mark cor. His new B.T. call
for

Dry tan 4 S.E. 32.67'

" tan stump 3' tall SW 37.60'

" " " $\frac{1}{2}$ " N.W. 7.12'

All were found and I set
post by flat measurement to
mark true cor. Setting up
instrument over this post I
run line east along state
road to N.E. corner

830.6 Hub

2600.8 "

3900.2 "

5-294.1 " N.E. Cor sets 0.3' South

Corrected line back and set

 $\frac{1}{16}$ cor at 1323.5- $\frac{1}{4}$ " " 2647.0 $\frac{1}{16}$ " " 3970.5

J.A. Johnston

Nov. 6-1915-

J. A. Johnston Transit & chain

J. H. Heninger Flag-chain - arc

Setting transit over iron marking
N.E. cor began line south along
road

1030 Creek & bridge

1300.8 Hub

2610.6 "

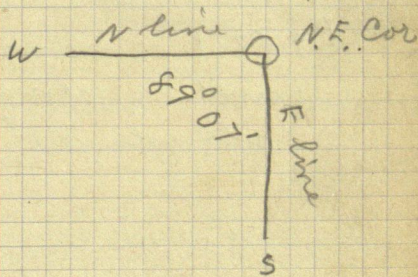
3899.9 "

5299.6 Stone marking S.E. cor
sets East 1.4'

Corrected line back and set
stake for $\frac{1}{16}$ cor. line Transit

 $\frac{1}{16}$ cor. at 1324.9 — .35 East $\frac{1}{4}$ " " 2649.8 .70 " $\frac{1}{2}$ " " 3974.7 1.0 "

Angle between true north line
and true east line = $89^{\circ}07'$



J. A. Johnston

Nov. 7-15-

Sunday - No Work

Nov 8-1915

I engage A. Norman as Axeman
Johnston transit & chain

Hininger flag chain & ace

A. Norman ace

Setting instrument over
NW. cor begin a line south
var. 9.00 This line makes
angle of $90^{\circ}05'$ with N. line

732.4 hub

1235.6 "

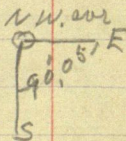
1805.9 "

3223.2 " No sign of B.T. cut-

4002.8 $\frac{1}{4}$ cor which comes

5027.1 " in meadow

5429.1 stake in meadow
said to mark S.W. cor of sec. 1
stands 48' west



J. A. Johnston

9

1-137-31

Nov 9th 1915

Johnston transit & chain
 Hinnerger flag chain all
 J Norman Ace

Setting instrument over stone marking
 S.E. cor 9 turn angle (calculated) of
 $92^{\circ}18'$ and run west

377.7 Hub

699.7 "

1544.6 "

2146.6 "

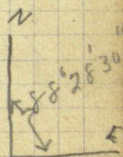
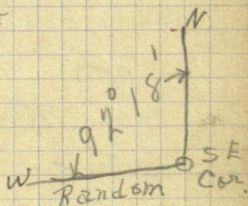
3801.9 "

4395.2 "

5223.6 " intersect west random
line at

5271.6 Stake in meadow said
 to mark S.W. cor set S. 0.5 feet

Angle between South random &
 west random $88^{\circ}28'30''$



J. A. Johnston

10 1-137-31

Nov. 10 - 1915

Being uncertain of the position
of S.W. cor of sec. 1. we go
one mile south to cor of 11-12.13.14
set by Hallett and run North
var. 9° Could not find stone
set by Hallett but set small
slake to start from, from the
four New B.T.^s for cor of 11.12.13.14,
which are

Pine stump	8 N $11^{\circ}30' E$	52.70'
" "	12 S $58^{\circ}41' E$	47.20
Green N.P.	10 S $62^{\circ}45' W$	52.30
" "	8 N $16^{\circ}14' W$	71.70'

Running north

660.2 Hub
11 17.2 "
15-10 enter creek
15-25 leave "
16 16 Hub.

Rained nearly all A.M.
P.M. rain, no work

Johnston transit & chain
Heminger flag chain & etc
A Norman are
J. Johnston

11 1-137-31

Nov. 11. 1915

Johnston Transit & chain
Huninger flag chain all
A Norman axe

Continue North on line

2162 Hub

2707.9 "

3791.0 "

4413.8 "

5174.6 "

Stake in meadow

49.6 feet west

This line intersects west random
line at angle of $179^{\circ}36'$

P.M. Beginning again on east
random line continue west
to chainage 6500

J. Johnston

12 1-137-31
Friday Nov 12. 1915

Johnston transit & chain
Heninger chain flag are
Aul norwar are

Continue west on east random
line.

6967.6 Hub

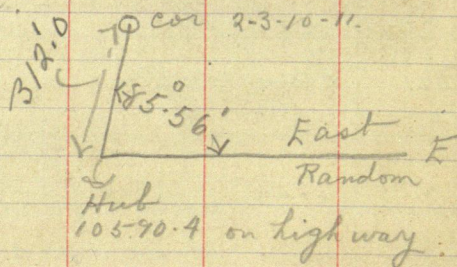
7844.6 "

8402.6 "

9027.8 "

9996.8 "

10590.4 Hub from which 9
turn angle $85^{\circ}56'$ to stake
marking cor section 2-3-10 H.
set by Hallett.



From stake at cor 2-3-10-11
new B.T.s ^{set} as follows

Green J.P. 8" N 48 E 23.1

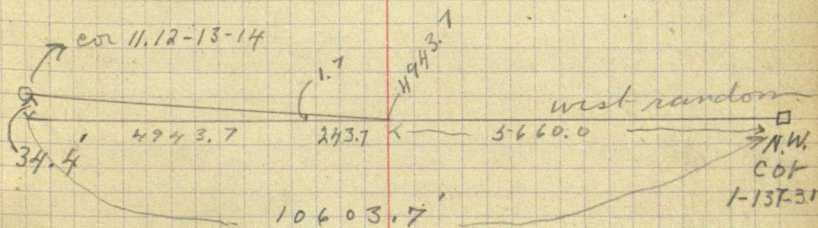
dry J.P. 6" (10' high) N 34-30 W 38.9'

Nov 12 continued

Returning to west random line
an intersection was made with
S. 11 random line run north from
cor of 11-12-13-14. Intersection comes
at bearing 4943.7 on the latter line.
A point on this line was taken at 4700
and west random produced to point
1.7' feet east of it.

That is in $4943.7 - 4700 = 243.7$ feet
these lines diverge 1.7'. Then if west
random line was produced it would
miss cor of 11-12-13-14. 4943.7×1.7
 $= 34.4$ feet to ^{243.7} east—

Using angle 24° ^{found} as intersection angle
we have $4943.7 \times \sin 24' = 4943.7 \times .00698$
 $= 34.50'$



Saturday Nov 13, 1915.

Weather bad so spent day calculating corrections for establishing S.W. cor of sec I and $\frac{1}{16}$ & $\frac{1}{4}$ cor on west and south sides.

Sketch on opposite page shows method used in tying south random line to cor of 2-3-10-11.

At chainage 10568.3 on this line cor 2-3-10-11 set N 311.2'

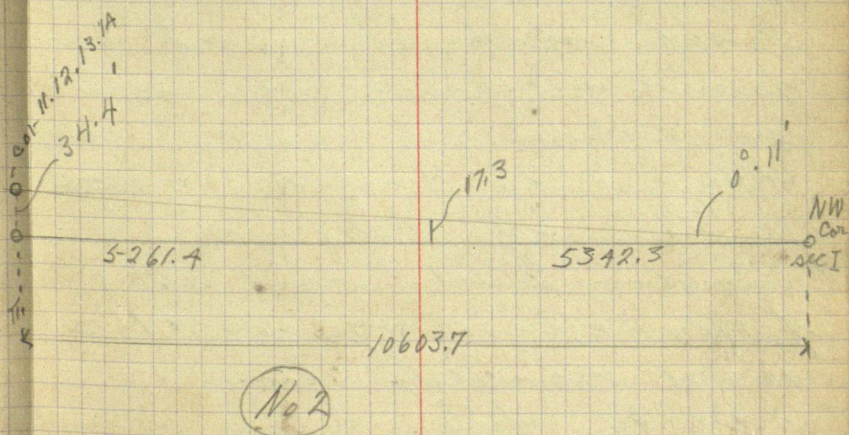
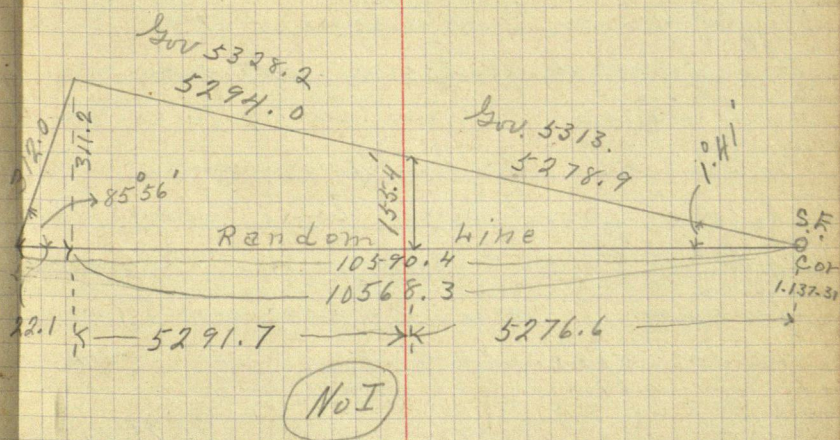
Dividing 10568.3 in ratio of gov. chainage on south side sec. 1 & 2 sec 1 gets 5276.6'.

Offset from this point to point on true ^{line} between S.E. cor 1 & S.W. cor sec 2 is 155.4'.

Setting instrument at point located by this offset a line \perp to true line was established by turning angle of $1^{\circ}41'$ to right from offset. S.W. cor of sec. 1 must lie on this line. See sketch page 17.

In a similar way distance between N.W. cor 1 & S.W. cor 12 was divided in proportion to gov chainage on west side of these two sections S.E. 5361.2 & 5280.0 which makes

13-



west side section 1 5342.3'

Perpendicular offset at this chainage to point on true line = 17.3'. From this point + offset was set from true line between N.W. cor sec I & S.W. cor^{*} sec 1h.

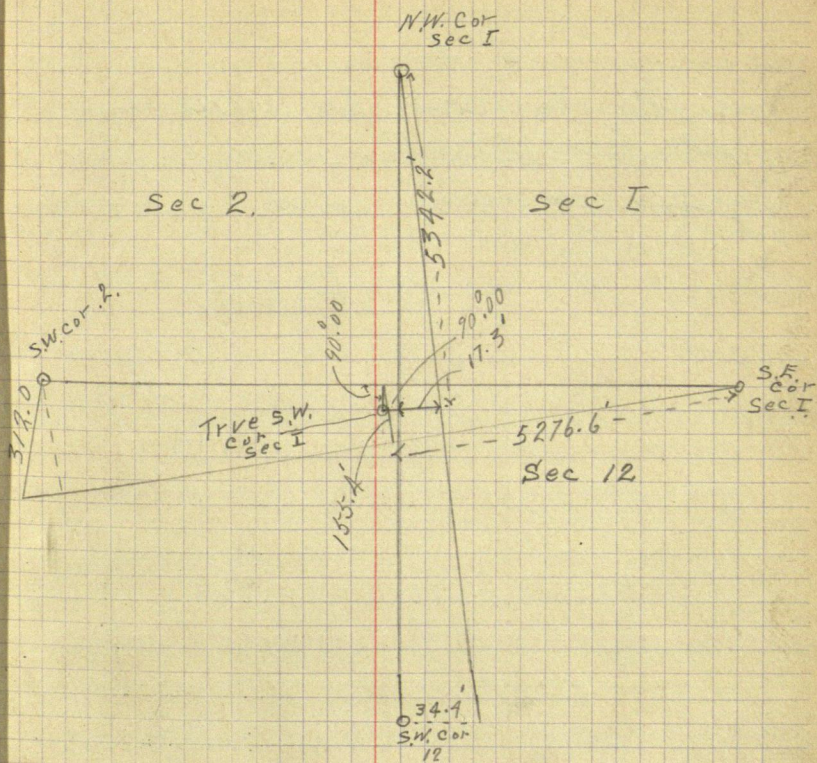
Intersection of this perpendicular and the one from true line between S.E. cor sec I and S.W. cor sec 2 marks position of true S.E. cor sec I. See sketch opposite page.

Sunday Nov 14th 1-137-31

A.M. Assisted by J.H. Heninger I set stake to mark true position of S.W. cor sec I as explained in notes. Found this stake to set 87' north from chainage 5278.6' on south random line and 57.3' west from chainage 5342.1 on west random line.

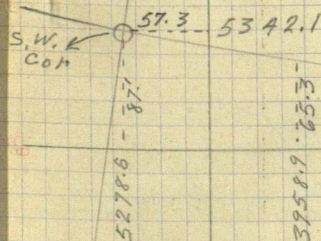
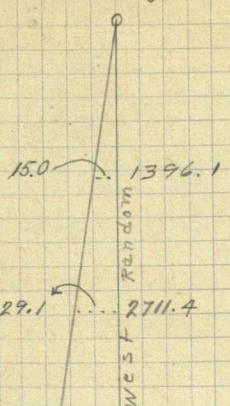
With these measurements known I calculated points on random lines from which to set $\frac{1}{4}$ & $\frac{1}{16}$ cors on west

(17)



and south lines. Also calculate
angles to turn for running
interior lines ready for
beginning this work on Monday
morning.

J. A. Johnston

N.W. cor
Sec I

South

Random

1319.6

S.E. cor
I O

20

1-137-31.
Bungo Sup.

Monday Nov 15

Began work running interior lines
Johnston Transit

J. H. Henniger Axe & flag

A Norman Axe

Setting instrument over true East
 $\frac{1}{16}$ cor on north side sight west on
 true line and turn $89^{\circ}09'30''$ left
 and ran south. On reaching
 south line set east $\frac{1}{16}$ cor on
 south line and found our
 line from the north missed it
 $\frac{1}{2}$ tenth to the east.

P.M.

Setting instrument over south
 $\frac{1}{16}$ cor on east side sighted N
 and turned angle $91^{\circ}27'$ to the
 left and ran west. Darkness
 prevented getting this line all
 the way through. A Norman quits
 work to go deer hunting.

J. A. Johnston

21.

1-137-31
Bungo Twp

Tuesday Nov 16

Continue running interior lines
Johnston transitJ. H. Heninger Ace & flag
L. Heninger "Grover Heninger works in A.M. (His
time for half day is given his father
J. H. Heninger in P.M. of 19th to simplify
accounts)A.M. set south $\frac{1}{4}$ cor on west side
and continued interior line begun
yesterday P.M. This line misses
 $\frac{1}{4}$ cor 2.4' to the north.Set $\frac{1}{4}$ cor on west side and
also North $\frac{1}{4}$ cor west side.Setting instrument over true
west $\frac{1}{4}$ cor on north side
sighted east and turned
angle $90^{\circ} 45' 30''$ to left and
ran south.On reaching south line
set west $\frac{1}{4}$ cor and found
line from the north missed
by 0.8' west

J. H. Johnston

Wednesday Nov 17.

Continue interior lines

In Hagerstrom Begin work as
aceman.

Setting up over $\frac{1}{4}$ cor on
north side sight east and
turn angle $90^{\circ}48'$ right and
run south. On reaching south
side set $\frac{1}{4}$ cor and found
line from the north misses
0.4' west.

P.M.

Setting instrument over true
 $\frac{1}{4}$ cor on east side sight
north along true line and
turn angle $91^{\circ}34'$ left and
run west. set hubs at intersection
of all N.E.S. lines. Miss $\frac{1}{4}$ cor
on west side 1.2' south.

J. A. Johnston

23.

1-137-31
Bravo Twp.

Thursday Nov 18

Continue interior lines

J Degerstrom goes to Pine River
with team to get iron monuments.

Johnston Transit

J H Honinger Axe and flag

M Kegerstrom Axe

Setting transit over true north
 $\frac{1}{16}$ cor on east side and
 sighting north turn angle
 $91^{\circ}40'$ left and run west.
 Set hub at intersection of all
 N & S lines. Miss north $\frac{1}{16}$ cor
 on west side 0.6' south.

P.M. J. Kegerstrom returns at
 3 o'clock with only seven iron
 monuments no more being
 available. Calculated corrections
 for placing interior corners.
 see sketch pages 26-27

J. Johnston

24

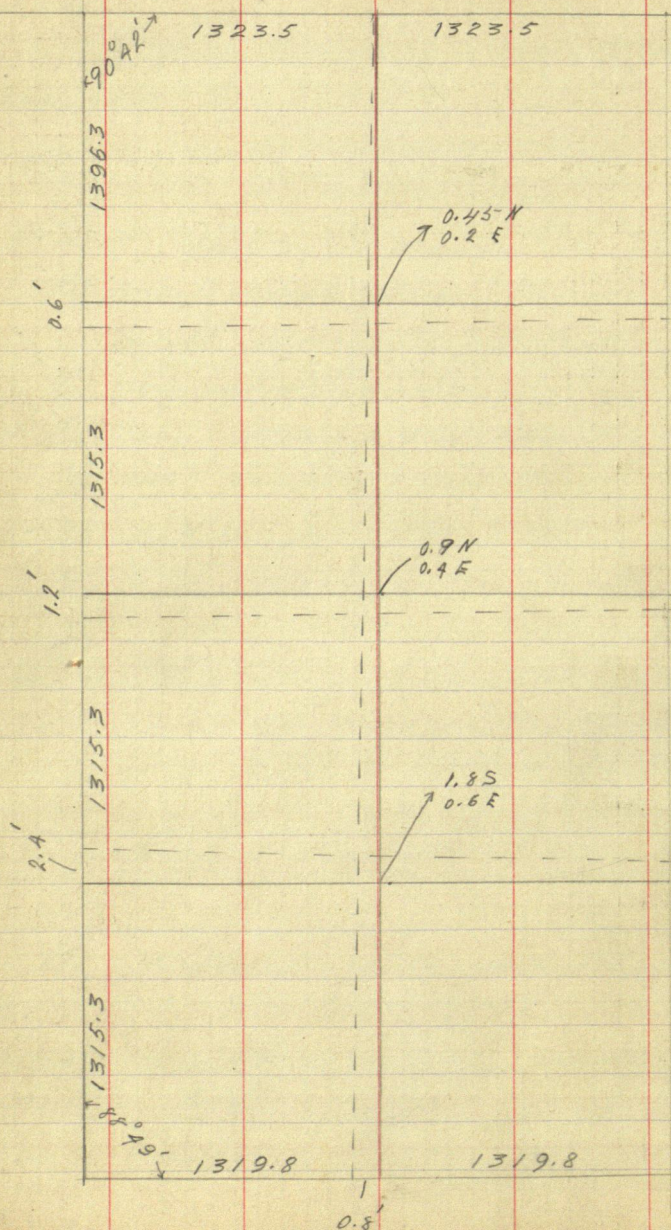
1-137-31
Bulgo Twp.Friday Nov 19
A.M.Began placing iron monuments
assisted by

J. H. Heringer

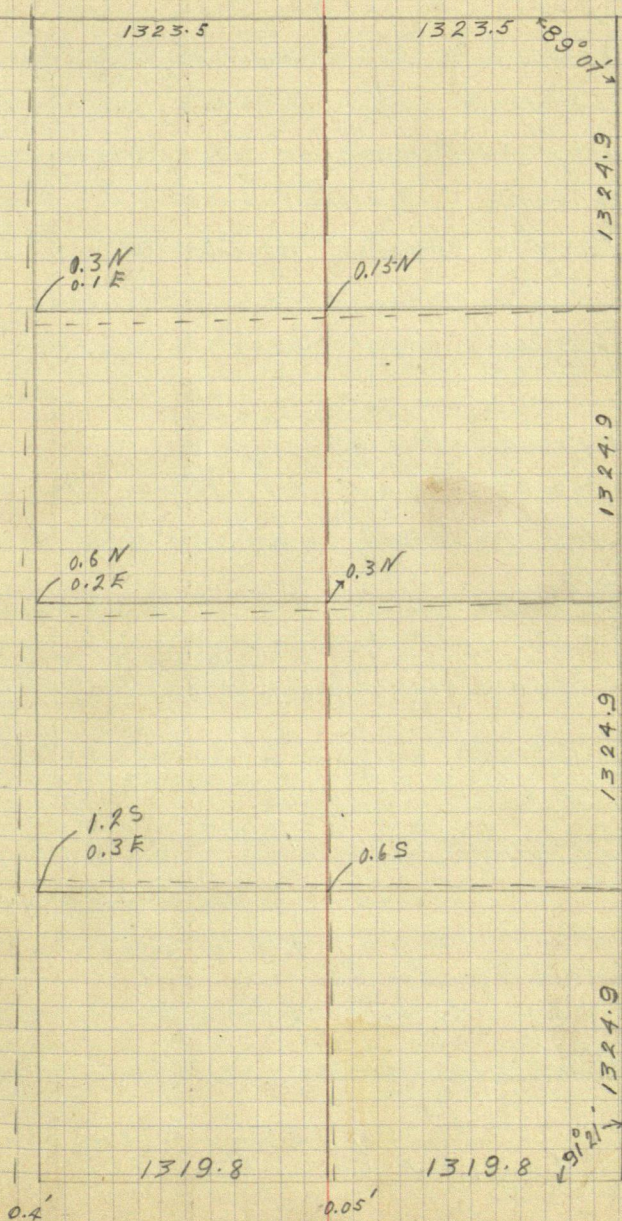
J. Wagerstrom.

Placed iron monuments at
S $\frac{1}{4}$ cor east side. Blvin flush
with surface of road $\frac{1}{4}$ cor east sideEast $\frac{1}{4}$ cor ~~was~~ e & w center line ^{2 pits} $\frac{1}{4}$ cor center of section - {2 pits}West $\frac{1}{4}$ e & w $\frac{1}{4}$ line 2 pits $\frac{1}{4}$ cor. west side. {in open water
in meadow no pits}S W cor section. comes in wet
meadow now frozen hard
no pits. Lift J. P. post 5"
square standing 3' high
along side of iron.P.M. Without any assistants I
set hubs at true interior corner
and marked same with gourd
stakes. After supper walked to
Pine River.

J. A. Johnston



27

1-137-31
Brng. 0 Twp.

Sketch showing corrections for placing
Interior Corners from intersection of $\frac{1}{16}$ lines as
run across the section.

J.A.J.

Saturday Nov 20

Spent day in Pine River. Got chain repaired and worked on notes of Sec I

Sunday²¹ - Remain in Pine River

Monday²² - Worked for Christian on Sec 12.

Tuesday²³ - " " " " "

Took night Train To Walker.

Wednesday Nov 24

Spent day in office working on notes of Sec I and on plat of same section

Thursday Nov 25 Thanksgiving

Friday Nov 26 Calculated acreage in sec I and worked on plat.

Saturday Nov 27

Calculated acreage in Sec 5 Cass Lake.

Sunday Nov 28 No work

Monday Nov 29 1915

Left Walker at 9.28 A.M. on train to Pine River. Engage Jno Moulster to take me and 18 iron monuments by auto to Sec I Bungo. Have dinner at Pine River (23 cts) and reach home of Jno Hegerstrom at 12.56 P.M.

Begin work at once setting I.M.^s aided by Jno Hegerstrom
J.H. Heringer.

List of I.M.^s set Nov 29

E $\frac{1}{4}$ on N. line	Driven flush with road
$\frac{1}{4}$ cor N line	" " " "
W $\frac{1}{4}$ " " "	" " " "
N.W. Sec Cor.	Comes in Meadow. I.M. driven over small tree driven as pile
N $\frac{1}{4}$ cor W. Side	In meadow. Driven over pile
$\frac{1}{4}$ cor at center of N.W. $\frac{1}{4}$	2 pits
$\frac{1}{4}$ Cor at center of N $\frac{1}{2}$	2 pits
$\frac{1}{4}$ cor at center N.E. $\frac{1}{4}$	2 "
N $\frac{1}{4}$ Cor East Side	Comes in ditch Driven flush with earth surface

J.A. Johnston

1915

30

1-137-31

Tuesday Nov 30

Continued setting I.M.^s Sec. I
 assisted by J. H. Hminger
 and Hagerstrom

Drove I.M. $2\frac{1}{2}" \times 4"$ in Road at cor
 of sections 11-12-13-14. from which
 new bearing trees set as follows.

Pine Stump	8"	N 113° E	52.70'	} Var 9° 00'
" "	12	S 58° 47' E	47.20'	
Green N.P.	10	S 62° 45' W	52.30'	
" N.P.	8	N 16° 14' W	71.70'	

Also drove I.M. $2\frac{1}{2}" \times 4"$ in Highway
 at cor of sections 2-3-10-11 where
 new B.T.^s stand

Green Jackpine 8" N 48° E 23.1'
 Dry " 6" N 34.30° W 38.9'
 Var. 9° 10'

List of I.M.^s placed in Sec 1-137-31

S $\frac{1}{16}$ cor on West side - in Meadow. Over pile

$\frac{1}{16}$ cor center S.W. $\frac{1}{4}$ 2 pits

$\frac{1}{16}$ cor " S $\frac{1}{2}$ 2 "

$\frac{1}{16}$ " " S.E. $\frac{1}{4}$ 2 "

E $\frac{1}{16}$ cor on South line. Driven over pile

$\frac{1}{4}$ cor " " " " " "

W $\frac{1}{16}$ " " " " " "

J. A. Johnston

(31)

1-137-31

Tuesday Nov 30th 1915

Finished setting monuments
at 4 P.M. and then walked out to
Pine River. Supper at Barclay Hotel
and took night train to Walker.

J. J. Johnston

Wednesday Dec 1st 1915

Worked on Sec 1-137-31 in Office.

With Mr Curo made out Bills for
all charges against Section in
connection with its Subdivision.

J. J. Johnston

Saturday

33

141-31

Sept 2nd 1916.

Horst with survey outfit and notes
leave Walker for Ten Mile Lake to survey
a county road in Sec 26. 141-31

arrive at 10 A.M. Cliff Long takes Horst
and outfit across lake to Robert E.
Delaney's Cottage. boat hire 50 cts

Horst - Robert Delaney - and Gary Sobel
run transit line from U.S. M.C. No 7.
N on sec line between secs 25 and 26 to
U.S. M.C. No 15. both having been established
by Euro and marked by an I.M.

From M.C. 15 we chain S to center of
State Rural Highway No. 83 being 284.0
ft thence $N 65^{\circ} W$ on S.R.H. (curve in S.R.H.)
328.7 ft to point of beginning of
County road

I back sight to intersection of S.R.H.
and sec line between secs 25 & 26
and turn SE angle $42^{\circ} 55'$ follow an old
road 171.0 ft

Thence Right $11^{\circ} 51'$ - 115.0 ft on old road
thence Right $40^{\circ} 00'$ - 30 ft leave old road
thence Right $48^{\circ} 18'$ - 233.7 ft
thence Left $5^{\circ} 22'$ - 164.6

thence Left $23^{\circ}27'$ -156.7 ft

thence Left $16^{\circ}50'$ -288.5 "

thence Left $6^{\circ}54'$ -565.2 "

no courses chained today after leaving
the old road

we quit for night

Horst at Robert Delury's for supper
over night and breakfast

E. B. Horst.

Sunday

35

Sept 3rd 1914

Horst transit & chain Robert Odum

ape & chain Guy Gobel ape & flag

Continue road around ten mile lake

thence Left $6^{\circ}39'$ - 154.6 ft

thence Left $16^{\circ}28'$ - 226.0 "

thence Right $31^{\circ}21'$ - 208.0 "

dinner

Thence Right $6^{\circ}55'$ - 508.8 ft

thence Left $18^{\circ}29'$ - ^{at 72.5 ft cross random}
_(see line. at 159.2 ft Hut)

thence Right $53^{\circ}27'$ - 189.0 ft (cross neck of swamp)

thence Left $55^{\circ}26'$ - 270.0 ft (Hardwood)

thence Left $12^{\circ}46'$ - 329.4 ft " "

thence Right $22^{\circ}00'$ - 66.7 ft " "

thence Right $51^{\circ}00'$ - 122.6 ft to end of road

ELM tree sets N. 23 ft from hut at end
of road

Quit for night

Horst at R.E. Odum's

Monday 36

Sept 4th 1916

Horst transit and chain Robert
Delury chain G. my Gabel
axe flag & chain

I set transit on road line and
cause to be set a Hub on an
old brushed line which I take to
be a random sec line between
Sections 26 and 35 T141R31 between

M.C.'s 8 and 9

I set transit over Hub just set
sighting to Hub on road line I read
S.W. angle to random sec line

$= 71^{\circ} 02'$ we set Hubs E and W of
transit and I leave Gabel to cut
random line clear of brush & trees
Horst and Delury begin to chain
courses of road line, run Saturday
and Sunday

I record same in distance columns
on preceding pages 33, 34, & 35

I send Delury to look for B.T.s to
Z.S. M.C. No 8 where notes call for

Birch 8 N $34^{\circ} E$ 16 = 70.56 ft

" " 14 7 S $59^{\circ} W$ 12 = 7.92 ft

Sept 4th continued

Goffe and I run transit line over
brushed out line W, setting hubs
to lake. at E. side of lake at M.C. No 9
where U.S. Notes call for post and
W. Pine. $36\ 547\text{E}\ 39. = 25.74\text{ ft.}$

W. Pine. $18\ \text{N}\ 9\ \text{W}\ 43. = 28.38\text{ ft.}$

we find old U.S. Post. and 2 other posts
I also find stump of 36 in W. Pine B.T.
badly burned but still bearing the
U.S. scribe marks

the N.W. B.T. stump is destroyed except
a few large roots

I run required course from old M.C. Post
to B.T. stumps and find same at true
point for cor I pull up old post and
set in its place a $3'' \times 3'' \times 4'$ Maple Post
Cor sets S of random line 2 ft.

we chain E from Verb. 2 ft N. of M.C. No 9
at 208 ft E out swamp.

at 396 " " leave swamp.

at 624.2 " " at hub

" 846.0 " " out pt of swamp

" 900.0 " " leave " "

" 1114.0 " " out swamp

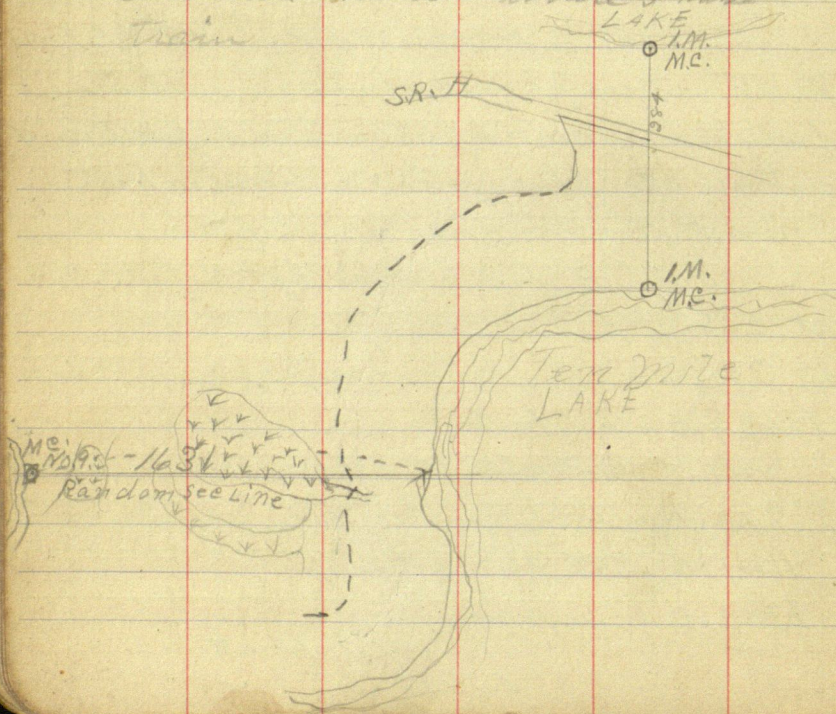
" 1300.0 " " leave " "

E.B. Horst

over.

Sept 4-1916 continued.
 at 1317.7 ft E P.I. Hub of road
 line and random see line
 at 1430.1 ft E Hub
 at 1600.0 " " "
 at 1631.0 " " " Waters edge of lake
 we are unable to find B.T.s to
 M.C. No 8

begins to rain at 11-30 a.m.
 P.M. I return to Walker for
 special Notes fare 25 cts.
 Robert Delury takes me to
 Ten Mile Station where I take
 train



Wednesday, May 17-1916.

Horst Compass, Fred Hawkins
and Robt Delury chain
working for Fred Hawkins
We take 9-28 train to State San
and walk to S.E. cor of Twp 142
Rge 31 where we find an I.M. set
by Curo. from this point we
run compass line N and chain
roughly to keep our position
at 26.27 ft N I find old U.S. B.T.
to 1/4 cor on E side of sec 36
where Curo. Notes call for

N. Pine 14 S $79\frac{1}{2}^{\circ}$ E 9 = 5.94 ft.

N. Pine 12 N 43° W 26 = 17.16 ft.

Both plainly marked being stubs
about 6 ft high from these I
set a 4x4x60 in wood post
for true cor and continue our
compass line N to S.E. cor of sec
25. 142-31 where Notes call for

Y. Pine. 18 N 20° E 24 = 15.84 ft.

Y. Pine. 16 N $79^{\circ}30'$ W 96 = 63.16 ft.

I find stub of N.E. tree plainly marked
and N.W. B.T. lying on ground plainly

E. B. Horst.

May 17-1916 continued

Marked both check with field notes from which I set a $3 \times 3 \times 40$ inch Pop pole post for true S.E. Cor to sec 25. We continue N between secs 25 & 30 with compass and rough chaining at about 2640 ft N where U.S. Notes call for 1/4 post and following B.T.s
Birch $3 N 46^\circ W 17 = 11.22$ ft.

Red Oak $4 S 45^\circ E 8 = 5.28$ ft.

We look over about ten acres of ground but are unable to find any evidence of a 1/4 cor or B.T.s but we find a cedar post (Round) marked 2640 we continue N at about 4040 we intersect south shore of Beech lake where U.S. Notes call for post and following Bearings

Birch $5 S 63^\circ 30' E 4 = 2.64$ ft

Balsam $6 S 69^\circ 30' W 7 = 4.62$ ft

We are unable to find any post or B.T.s we are informed that this cor has been gone for an indefinite period of time.

Quit for night and return to Walker in a boat ordered by Robt Selury
C.B. Horst.

142-30-31.

Thursday, May, 18-1916

Horst transit and chain

Hawkins and Delury axemen

Hawkins also chaining

We cross Secch Lake in Robt
Delury's launch and land
at M.C. No 21. 142-31. betweensecs 19 + 24 on N bank of lake
where Notes call for following.Y A. Pine. $24 N 49^{\circ} E 28 = 18.48$ ft.Y A. Pine. $20 N 65^{\circ} W 11 = 7.26$ ft.stumps of both trees still remain
bearing the B.T. plainly and check
fine with notes except the
N.E. B.T. which is about 0.7 ft
to far away caused by the
shore giving waywe set a $2\frac{1}{2} \times 2\frac{1}{2} \times 48$ in post
at true point for corner and
erect a large sight v of cor
we then cross lake and set
a Hub 128 ft S of lakeI set transit over Hub and
backsight N to M.C. 21 and start
line S variation reads $7^{\circ} 30'$

Delury starts cutting line S

E.B. Horst.

142-30-31.

43

May 18-1916 continued
and Hawkins and I triangulate
lake by chaining Nat 90° angle
200 ft where we set hut and tack
stake transit west to this hut and
backsight to hut on random line
and turn N.E. angle to M.E. No 21
angle = $85^\circ 28'$ but on account of
the short base line and high wind
I am afraid the triangulation is
not correct.

distance according to reading = 2522.5
ft to Hut. using this Hut as sta
2522.5 ft S we continue line S
between secs 25 and 30

at 2677.7 ft S set Hut

" 2936.0 " " " "

" 3010.0 " " enter cedar swamp

" 3107.1 " " set Hut

" 3329.0 " " leave cedar swf

" 3390.3 " " set Hut,

" 3817.9 " " set "

" 4217.5 " " " "

" 4696.4 " " " " and quit
for night

E.B. Horst.

44

142-30+31

Friday May 19-1916.

Horst and same crew continue
line S between secs 25+30

at 4851.0 ft S set Hub

" 5531.0 " " " "

" 5879.6 " " " "

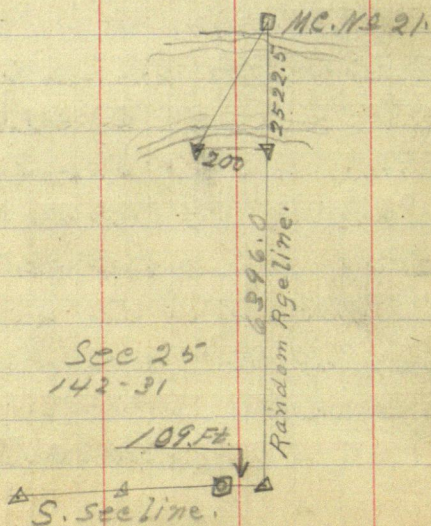
" 6007.5 " " " "

" 6396.0 " " S.E. Cor of sec 25

142-31 sets W 109.0 ft

Set transit over true sec cor
and run random line W between
secs 25 and 36 at about 10° var
we cut line about 2000.0 ft and
quit for night

E.B. Horst.



Wednesday, May 24-1916.

Horst. transit and chain

Fred Hawkins chain and axe.

Rott declury flag and axe.

we continue S sec. line of sec 25
W to lake and Hawkins and I
go to S.E. cor of 25 and chain W
at 54.0 ft W set Hub

" 581.1 " " " "

" 1471.8 " " " "

" 1872.4 " " " "

" 2113.7 " " " "

" 2210.7 " " " " near waters
edge of Secch lake

2212.0 ft W waters edge swampy
shore brush are growing 100 ft
farther out.

we look for B. To to M.C. No 2 U.S.

Notes Call for J. Pine. post and

J. Pine. $30 S 47^{\circ} E 68 = 44.88$ ft.

J. Pine. $24 N 45^{\circ} W 65 = 42.90$ ft.

we are unable to get to all the
stumps along the shore on acct. of
high water so we leave it for
the present. (crossed lake in declurys lagoon)
E.B. Horst.

Thursday May 25-1916.

Horst and same crew go over
lake in Selurys launch.
we land near point where
Plat shows M.C. No. 6 to be and
where U.S. Notes call for post and
W. Pine. $30 N 64 W 14 = 9.24$ ft.

Y. Pine $24 S 18 W 18 = 11.88$ ft.

we find N.W. B.T. ^{stump} bearing the B.T.
the shore is washed away to center
of stump but stump is still in
its original position

the S.W. stump also bears B.T.

but has fallen into the water

from the N.W. B.T. I set a $4 \times 4 \times$
60 in post for true M.C. No. 6

we erect a large sight W of this cor
and cross lake where Notes call
for M.C. No. 22 being on E side
of lake between Secs 19+30

T142 Rge 30 where U.S. Notes
call for post and following B.T.'s
Birch. $10 S 74^\circ E 147 = 97.02$ ft.

Oak. $7 N 89^\circ E 142 = 93.72$ ft.

we look carefully along lake
shore for $\frac{1}{4}$ mile but find nothing
quit for night. E.B. Horst.

142-30-31
Fred HAWKINS.

47

Wednesday Dec 13-1916.

Fred Hawkins comes to office
to have me continue the work begun
in May which we left to finish
when the lake is frozen

I go with him to his cottage
we get there at dusk. Walked over on ice
over night with Hawkins
E. B. Horst.

142-30-31

Thursday Dec 14-1916

Forst and Hawkins go to
M.C. No 21 N side of Leech Lake
on Rge line and Chain S on
ice along random Rge line
run last May

at 610 ft S enter Leech Lake

" 2278.0 ft S leave Leech Lake

" 2406.0 " " Hut used as

triangulation Hut and marked
2522.5 S which is wrong on
account of high wind and short
base line. Difference = 116.5 ft

Subtract 116.5 ft from each Hut
which gives true distance S of M.C.
No 21. Hut MK 2522.5 S is only 2406.0 South

at 10 a.m. I walk to Walker to see
Curt in regard to establishing
corners along Rge line also to
get notes of T 142 Rge 30

Return at 2 P.M. and calculate
true distance to Range line Huts
also corrections to Huts for true
line

Hut marked 2522.5 = 2406.0 S and
goes W 41.77 ft to true line

142-30-31

49

Dec 14-1916 continued.

Hub. Marked - ^{true dist} South - goes W to true line

- " 2677.75 = 2561.25 goes W 44.46 ft
 " 2936.05 = 2819.55 " W 48.95 ft
 " 3107.15 = 2990.65 " W 51.92 ft.
 " 3390.35 = 3273.85 " W 56.83 "
 " 3817.95 = 3701.45 " W 66.28 "
 " 4217.55 = 4101.05 " W 71.19 "
 " 4696.45 = 4579.95 " W 79.51 "
 " 4851.05 = 4734.55 " W 82.19 "
 " 5531.05 = 5414.55 " W 94.00 "
 " 5879.65 = 5763.15 " W 100.05 "
 " 6007.55 = 5891.05 " W 102.27 "
 " 6396.05 = 6279.55 " W 109.00 ft

to S.E. Cor of Sec 26-142-31.

Quit for night

Stop 142 - Rge. 31

Dec-15-1916 Friday.

We return to M.C. No. 2 - T 142
Rge 31 Where U.S. Notes call for
G. Pine. $24^{\circ} N 45^{\circ} W 65 = 42.90$.
G. Pine. $30^{\circ} S 47^{\circ} E 68 = 44.88$.

The S.E. tree ^{stump} has washed away
with the shore but, is still
there as driftwood.

The N.W. B.T. stump 6 ft high, is
still there from which I set
a 4 in spike on ice 6 ft from
shore, for true M.C. No. 2.

Returning to Sta 2113.7 ft W
on random S boundary line
of sec 25. I turn S.E. angle
from line to true M.C. No. 2.
angle = $100^{\circ} 00'$ distance =
268 ft

at sta 2160.2 ft W M.C. No. 2
sets 5263.9 ft

Correction = 1231 ft S for each
foot W.

Quit for night
E.B. Horst.

Saturday, Dec. 16 - 1916.

Horst. transit. with Hawkins and
2 helpers set Hub 581.1 W - S
71.3 ft. and Hub 54.0 ft W goes S
6.65 ft.

I set transit over S.E. Cor of sec 25
sight W to Hub 54 ft W and turn
angle $7^{\circ}01'S$ to corrected hub and
run true line W to Such Lake.

angle of true E and S boundaries
of sec 25 = $99^{\circ}30'$ (N.W. angle)

at sta 2152.7 ft W set Wit. Cor.
to M.C. No. 2. with New B.T. &

R.O. 4 N $30^{\circ}20'E$ 20.6 ft. } 17° Var.
R.O. 4 S $39^{\circ}30'W$ 18.25 ft.

Wit cor sets E of M.C. 59.5 ft.

I set transit over Wit cor and turn
N.E. angle of $129^{\circ}48'$ from true S
boundary and chain N.W. along
this line across small bay of
lake, at 198 ft enter overflow
at 310 leave overflow enter bay
at 1059 leave bay

at 1188.5 I set a 1X1X36 sq Iron
bar with following bearings
over

E/B. Horst.

52

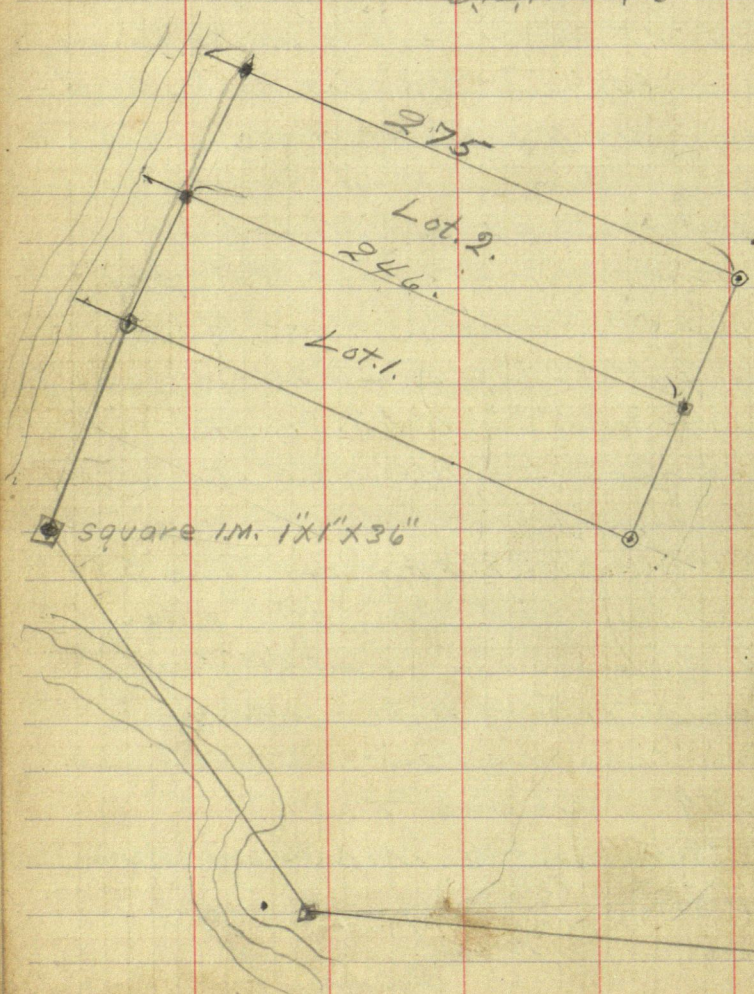
142-31.

Dec. 16, 1916.

N.W. cor stone of House =
 $N 86^{\circ} 45' E 77.58 ft.$

S.W. cor stone of House $S 69^{\circ} 30' E 75.80$
 outside corners of stone.

O.P. Horst.



Sunday Dec 18 1916

I get I.M.S at Walker and in P.M.
I go to Hankins and survey a
few lots on the sandy point.

Setting transit over sq I.M. I
sight S.E to Wit. Cor reverse telescope
and turn Right $33^{\circ}13'$ Chain 87.4 ft
and set 2x4 & I.M. 29 ft E of lake
being on S side of lot 1.

setting transit over this I.M. and
backsighting to square I.M. then
foresight and turn Right $3^{\circ}29'$
Chain N 60.02 ft and set wood stake
on line between lots 1 & 2

then Chain N 60.22 and set wood
stake on line of lot 2.

again backsight on square I.M. and
turn $91^{\circ}20'$ S.E angle and Chain E
246 ft and set 2x4 & I.M.

I set transit on this I.M. and
backsight N and turn N.W. angle
 $91^{\circ}20'$ Chain N 60.02 ft set wood
stake at 120.04 set I.M. and check
Chain N line of lot 2. find it O.K.

Length of lots E+W = 275 ft to water

C.B. Host.

141-31 - Ten Mile Lake.

55

Bob Delury

J.M. Greene-Transit.

with Robt Delury, Potvin

Arrive about 9 A.M.

search for M.C. #8

Highway #81

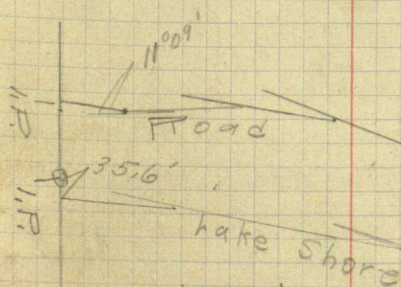
179°60

67°50

115°03

15°03

Lake shore. 64°55' x Fr 200' N 62°21' W



180°00
102°35'
133.5 S 74°25' E
11°09'
257.5 S 88°34' E
12°37'
320 S 75°37' E
12°41'
934.45 S 63°16' E
36°04'
246.6 S 27°12' E
64°55'
104 S 37°43' W
79°56'
117°39'
180°00'
7°12'
500 N 89°33' W
5°30'
600 N 75°03' W
1°10'24'
356 N 85°27' W
94°29'
388.1 179°55'

56

Check on Traverse of preceding

N. S

Dis	Bearing	Sin	cos	
133.5	^{77°28'} S 77°25'E	91598	21786	29.08
257.5	^{88°37'} S 88°34'E	99969	02501	6.44
32.0	^{75°59'} S 75°57'E	97008	24277	77.69
934.4	^{63°18'} S 63°16'E	89337	44932	420.33
246.6	^{27°13'} S 27°12'E	45710	88942	219.39
104	^{37°48'E} S 37°43'N	61176	79105	82.27
200	^{62°22'} N 62°21'W	88580	46407	92.1
500	^{69°34'} N 69°33'W	93698	34939	174.70
600	N 75°03'W	96615	25798	154.78
356	N 85°27'W	99685	07933	28.24
388	North	.00000	1.00000	388

838.53

835.14

5114

3.39

April 13.
Stall #15 @ 4 point. Bob Delury

10# 6' 12# 9' J. M. Greene

9# 2' 13# 4'

8# 5' 14# 1'

7# 3' 15# 2 1/2 @ p.

6# 3 1/2' 16# 0

5# 5' 17# 0

4# 4' 18# 4'

3# 4' @ 4 point 19# ?

2# 2' 1922.4

1# 1 1/2' 20# I. P. M.C.

0 = 0 of yesterdays work 4'

page

E. W.

X

Y

130.20

130.29

257.42

310.43

834.52

112.72

6362

177.16

468.49

579.69

354.88

197

O

130.29

387.71

698.14

1532.66

1645.38

1581.76

1404.6

936.11

356.42

1.54

O

- 29.08

- 35.52

- 113.21

- 533.54

- 752.87

- 835.14

- 742.33

- 567.63

- 412.85

- 384.61

1645.38 1643.84

3.84

1.97

1.54

1645.81

137.61 S. 77° 28' E

257.92 S. 76° E.

327.32 S. 63° 20' E

948.80 S. 27° 16' E

Running E
 Set up over Sta. 0-0th back
 sighted to Sta. 2nd L to 3rd 3° 38' R.

L 100° 4' 79° 55' = X

L 83° 34'

176° 22'

359° 60' ✓

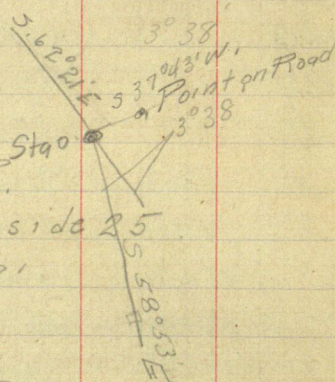
#3 L 4° 08' R.

1922A to M.C. S. side 25

#11 L 10° 49'

#15 5° 23' R

MC 50° 34' L L



5.6221' E Starting at Sta. 0, running E.

3° 38' 58° 53' E 300'

4° 08' 54° 45' E 800'

10° 49' 54° 56' E 400'

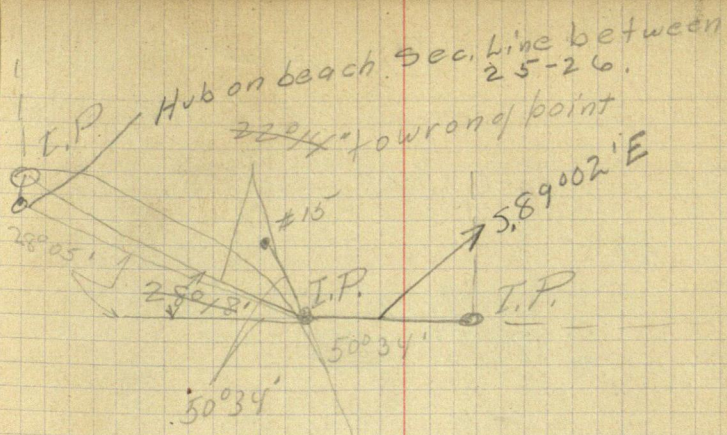
5° 23' 538° 33' E 422.4' to I.P.M.G. South side Sec. 25

50° 34' I.P. I.P. 1/4 Cor South side Sec. 25

589° 07' E 0 to 0 I.P. see Notes

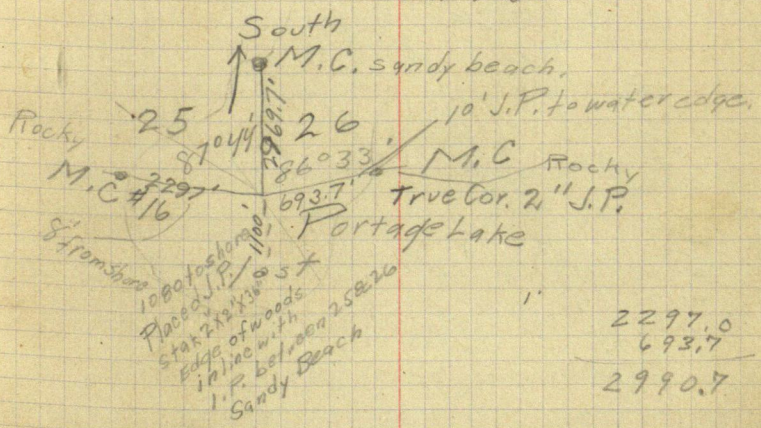
Dis	Bearing	Sin	Cos	N	S
300	58° 53' E	85612	51678		155.03
800	54° 45' E	81664	57715		461.72
400	54° 56' E	69382	72015		288.06
422.4	538° 33' E	62320	78206		330.34

1235.15
 .59
 1235.74



New B.T to M.C #16

N. Pine 10" N27°15'W 10.75
 Var 7°30'



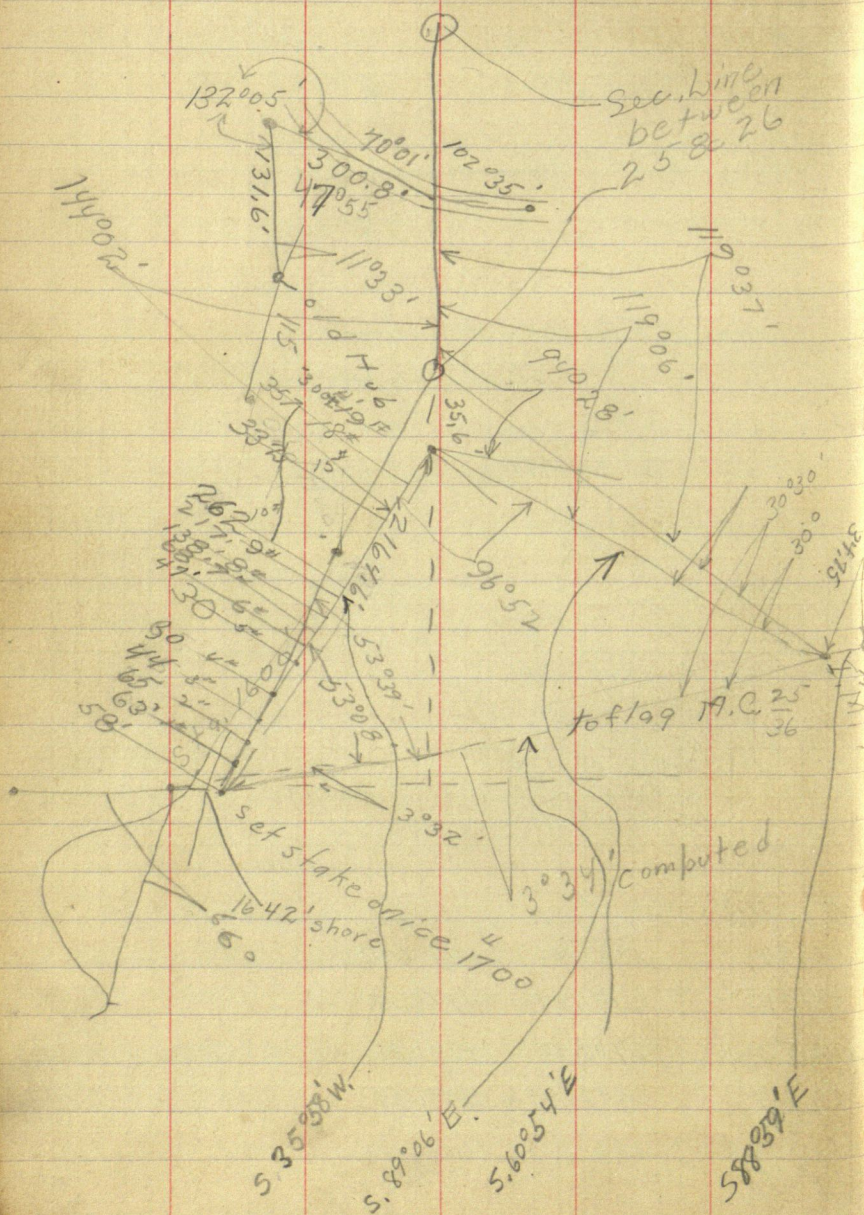
2297.0
 693.7
 2990.7

E.	W.	X	X
256.84	1581.76	-835.14	
	1838.60	990.43	
653.31	2491.91	1452.15	
277.53	2769.44	1741.21	
263.24	3032.68	2071.55	
1450.92	1516.		
34.75			
1485.67			

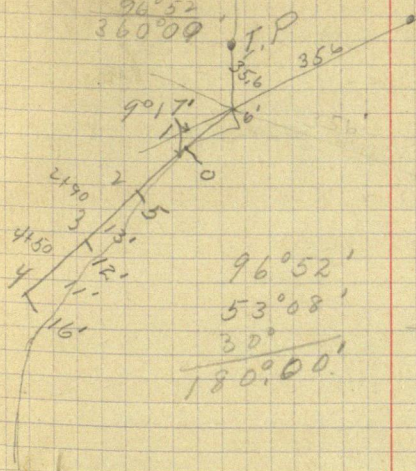
J. M. Greene

60 April 14

N Horst & Greene



$144^{\circ}02'$
 $119^{\circ}06'$
 $26^{\circ}52'$
 $360^{\circ}00'$



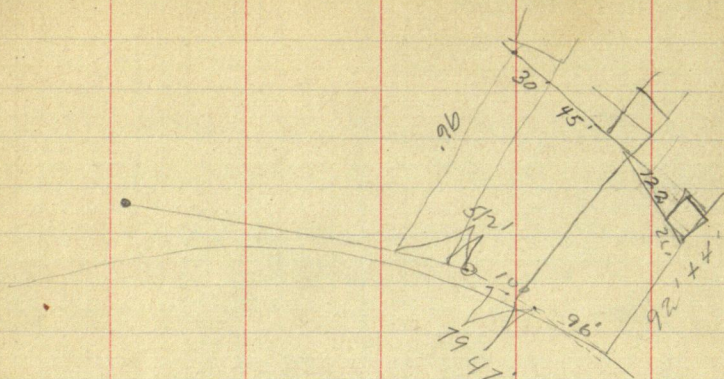
$96^{\circ}52'$
 $53^{\circ}08'$
 30°
 $180^{\circ}00'$

$119^{\circ}37'$
 $119^{\circ}06'$
 $31'$

$53^{\circ}39'$
 $30^{\circ}30'$
 $84^{\circ}09'$
 $95^{\circ}51'$

J. M. Greene

62



$$\begin{array}{r} 26 \\ 9 \overline{) 26} \\ \underline{18} \\ 8 \end{array}$$

$$\begin{array}{r} 6 \\ 9 \overline{) 6} \\ \underline{9} \\ 3 \end{array}$$

$$\begin{array}{r} 70 \\ 47 \\ 32 \end{array} \quad 79$$

68

		Sine	cos.	N	S.
137.61	S. 77° 28' E.	97617	21701		29.86
257.92	S. 88° 38' E.	99972	02385		6.15
327.32	S. 76° 00' E.	97030	24192		79.12
819.6					367.29
948.80	S. 63° 20' E.	89363	44880		425.81
241.90	S. 27° 16' E.	45813	88888		215.02
141.	S. 37° 39' W.	60622	79530		112.14
	62° 26'	88647	46278	92.55	
200	N. 62° 25' W.	88634	46304	92.61	
	69° 38'	93748	34803	174.01	
500	N. 69° 37' W.	93738	34839	174.15	
	75° 08'	96653	25657	153.94	
600	N. 75° 07' W.	96645	25685	154.11	
	N. 85° 32' W.	99696	07188	21.72	
356	N. 85° 31' W.	99694	07817	21.82	
421.8	North	.00000	One	421.8	
				870.02	
				870.59	868.17

D's	Bearing	sine	cosine	N.	S
300	S. 59° 48' E.	85536	51803		155.41
800	S. 54° 40' E.	81580	57833		462.66
400	S. 43° 51' E.	69277	72116		288.46
422.4	S. 38° 28' E.	62206	78297		330.73
34.75	S. 89° 02' E.	99986	01687		.59
					1237.85

		Sine	cos.	N.	S.
251.0	North			251.0	
2969.7	"			2969.7	
2297.	S. 87° 44' E.				
257.4					90.84
				3220.7	
				90.84	
				3129.86	

E W X X

134.33		134.33	2986	N.S. side #80 421.78
257.85		392.18		392.04
				385.89
317.60		709.78	306.71	306.71
113.19	732.41	709.78	483.03	-61.13
	847.88	1442.19		
110.82				

85.48 1581.93 869.10
 177.29
 177.27
 468.74
 468.69
 579.91
 579.87
 354.92
 354.91

1668.48 1666.34
 1666.22 1667.11 869.10

E W

256.61
 652.64
 277.11
 262.76
 34.75
 1483.87
 3152.35

1483.87 1237.85

3065.80 2106.95 = $\frac{1}{4}$ Cor $\frac{25}{36}$

M.C. #16

2295.2 + 2295.2 + 312986
 257.4 M.C. across L & H C

2552.6
 312986
 5236.81

46

Lat. & Dep. of Chords
3516' South of Monument

9/10/17

	Dis	Bearing	Sin	cosine	E.	S.
1	76.30	S 84° 23' E	99520	09787	75.93	7.47
2	50	S 83° 35' E	99374	11176	49.70	5.49
3	50	S 82° 57' E	99244	12274	49.67	6.78
4	50	S 82° 19' E	99102	13370	49.55	6.68
5	50	S 81° 41' E	98948	14464	49.43	7.5
6	75	S 80° 53' 30" E	98739	15830	74.05	11.88
7	75	S 79° 56' 30" E	98464	17465	73.83	13.11
8	50	S 79° 09' E	98212	18824	49.10	9.41
9	50	S 78° 31' E	97998	19908	49.00	9.95
10	50	S 77° 53' E	97772	20990	48.88	10.47
11	50	S 77° 15' E	97534	22070	48.76	11.03
12	50	S 76° 37' E	97284	23146	48.64	11.67
13	50	S 75° 59' E	97023	24222	48.51	12.11
14	50	S 75° 21' E	96749	25291	48.37	12.64
15	50	S 74° 43' E	96463	26359	48.23	13.18
16	50	S 74° 05' E	96166	27424	48.08	13.71
17	50	S 73° 27' E	95857	28485	47.93	14.24
18	50	S 72° 49' E	95536	29543	47.77	14.77
19	50	S 72° 11' E	95204	30597	47.60	15.30
20	50	S 71° 33' E	94860	31648	47.43	15.82
21	50	S 70° 55' E	94504	32694	47.25	16.35
22	50	S 70° 17' E	94137	33737	47.07	16.87
23	50	S 69° 39' E	93759	34775	46.83	17.39
24	50	S 69° 01' E	93368	35810	46.68	17.90
25	50	S 68° 23' E	92967	36839	46.48	18.42
26	50	S 67° 45' E	92554	37865	46.38	18.93
					1331.00	328.00

shore line beginning at point 67

X - Y

$$40.54 = \cot 13^{\circ} 51'$$

75.93 7.47

125.63 12.91

175.25 19.09

224.80 25.77

274.23 33.27

348.28 45.15

422.11 58.26

471.21 67.66

520.21 77.61

569.09 88.10

617.85 99.13

666.49 110.80

715.00 122.91

763.37 135.55

811.60 148.73

859.68 162.44

907.61 176.68

955.38 191.45

1002.98 206.75

1050.41 222.57

1097.66 238.92

1144.73 255.79

1191.56 273.18

1238.24 291.08

1284.72 309.50

1331.00 328.43

1329.75

1312

1775

1640

1350

1369.6

1132975000

97093

358820

291279

675410

13702582558

928520

873837

546830

615018

23938

71814

167566

49400

15155

30310

2 sin 1/2 Δ

4519.6

13699000

124

15155

5950

3031

29190

27279

18710

$$\Delta = 17^{\circ} 26'$$

$$\frac{1}{2}\Delta = 8^{\circ} 43'$$

$$1369.6 = C$$

$$15155$$

$$30310$$

$$FR = 452.0$$

$$M = 52.2$$

$$E = 52.8$$

$$4520 \times \tan 5^{\circ}08' =$$

$$08983 - 1$$

$$4520 - 2$$

$$X = -406.03$$

$$17966$$

$$44915$$

$$35932$$

$$406.03 / 60$$

$$y = -4501.87$$

$$b = 977.03$$

C - Big Circle

$$99599 - 54520 = 45079$$

$$-3524.84$$

$$450187$$

$$4320 - 2398376$$

$$589.33$$

$$1589.06$$

$$199198$$

$$497995$$

$$536040$$

$$411417$$

$$2912.87$$

$$398396$$

$$497995$$

$$45018748$$

$$380432$$

$$298797$$

$$816530$$

$$796792$$

$$197380$$

$$199198$$

Dis	Bearing	sine	cos	N	S
129.39	577°28'E	97617	21701	28.03	28.08
257.08	588°38'E	99972	02385		6.13
312.68	576°00'E	97030	24192		75.64
92.68	563°20'E	89363	44880		109.85
92.66	5.63°20'E	89363	44880		41.59
814.4	5.63°20'	89363	44880		151.44
					365.78
					5.93

$$\begin{array}{r}
 344.88 \\
 109.85 \\
 \hline
 235.03 \\
 354.3 \\
 \hline
 589.33 = 6
 \end{array}$$

$$\begin{array}{r}
 354.3 \\
 151.44 \\
 \hline
 202.86 = 4
 \end{array}$$

$$769.51 = X$$

96887

$$\begin{array}{r}
 354.3 \\
 28.1 \\
 \hline
 326.2
 \end{array}$$

$$\begin{array}{r}
 354.3 \\
 34.21 \\
 \hline
 320.1
 \end{array}$$

E

W

126.31

257.01

303.39

686.71

82.80

769.51

727.71

701.42

$$\begin{array}{r}
 354.3 \\
 109.85 \\
 \hline
 244.45 \\
 365.78 \\
 \hline
 121.33
 \end{array}$$

$$\begin{array}{r}
 42.21 \\
 151.44 \\
 \hline
 61.66
 \end{array}$$

383.32

$$\begin{array}{r}
 354.3 \\
 151.44 \\
 \hline
 202.87
 \end{array}$$

$$\begin{array}{r}
 354.3 \\
 151.44 \\
 \hline
 202.84
 \end{array}$$

70 35.6" S. of M.C. = 0.0.

N.E. Cor. Lot	X	Y
26	1414.6	-121.1
25	1377.5	-97.44
24	1320.4	-73.78
23	1273.2	-50.08
22	1225.9	-26.32
21	1178.5	-2.52
20	1130.9	21.39
19	1083.2	45.35
18	1045.3	69.40
17	987.3	93.51
16	939.2	117.41
15	890.6	142.07
14	842	166.48
13	793.1	191.04
T.P. Lot 13.	767.72	203.79
	769.51	202.87

$$\begin{array}{r}
 21701 - \sim - 1 \\
 \underline{13235 - 5} \\
 108505 \\
 65103 \\
 43402 \\
 65103 \\
 21701 \\
 \hline
 287.212735 \\
 406.03 \\
 \hline
 693.24
 \end{array}$$

$$\begin{array}{r}
 97617 - 3 - 2 \\
 \underline{13235 - 5} \\
 488085 \\
 292851 \\
 195234 \\
 292851 \\
 97617 \\
 \hline
 1291960995 \\
 3543 \\
 \hline
 1646.26 \quad 6485.8 \\
 4501.87 \quad 6148.13 \\
 \hline
 6148.13 \quad 337.67
 \end{array}$$

$$x^2 + y^2 = 1323.5^2$$

$$\frac{y}{x} = +9.35724X + 337.67$$

$$x^2 + 9.35724x^2 + 2 \times 337.67 \times 9.35724x + 337.67^2 - 1323.5^2 = 0$$

$$x = \frac{-6 \pm \sqrt{6^2 - 400}}{29}$$

		sin	cos	N	S
114.2'	S. 79° 56' E	98461	17479		19.96
53.76	S 83° 34' E	99370	11205		6.02
53.93	S 85° 54' E	99744	07150		3.84
35.96	S 87° 05' E	99930	03752		1.35
129.4	N 88° 38' W	99972	02385	3.08	
129.40	N 77° 29' W	97617	21701	28.08	
				31.16	31.17
18.18	S. 88° 13' 30" E	999515	030975		.56
					31.73
					177
114.2					19.96
53.76					6.02
53.93					3.84
35.96					1.35
18.18	S. 88° 11' E	99950	03170		.58
54.1	S. 86° 24' E.	99803	06279		3.40
80.9	S. 83° 03' E	99265	12100		9.79
80.8	S 79° 01' E	98168	19052		15.39
20.1	S 76° 30' E	97237	23345		4.62
33.8	S 76° 00	97030	24192		8.18
53.9	76° 00	97030	24192		13.04
4.62	76° 00	97030	24192		1.11
49.28	74° 17'	96261	27088		13.35
54.1	70° 43'	94998	33024		17.87
54.4	67° 01'	92062	39046		17.80
26.55	64° 15'	90070	43445		26.42
					11.51
					150.40

E
112.44

W

X
112.44Y
334.3

53.42

165.86

328.32

53.79

219.65

324.48

35.93

219.68
255.58324.45
323.13

129.26

219.67

324.55

126.32

35.91

35.93

255.58

255.58

2

18.17

213.75

224.8

273.75

48.95

25.77

322.57

348.34

112.44

112.44

334.34

53.42

165.86

328.32

53.79

219.65

324.48

35.93

125.63

255.58

12.91

323.13

18.19

175.25

273.75

19.09

322.55

54.00

224.80

327.75

25.77

319.15

70.30

274.23

408.05

33.27

309.36

79.40

397.50

487.45

293.97

19.54

422.11

507.09

289.28

32.79

539.88

281.13

52.29

592.17

268.06

4.48

596.65

266.95

47.44

644.09

253.60

51.06

695.18

253.63

58.33

745.91

235.73

23.83

711.68

235.76

26.74

235.79

203.90

74

				S	E
129.4	5.77°28'E	97617	21701	28.08	129.26
129.4	588°38'E	99972	02385	3.08	126.32
127.7	588°38'E	99972	02385	3.04	127.66
127.7	5.76°00'E	97030	24192	30.89	123.90
185.8	5.76°00'E			8.18	32.81
92.68	63°20	89363	44880	73.27	589.94
				287.66	471.21
				281.03	68.73
				<u>34869</u>	

202.85	769.46
<u>11.64</u>	<u>24.13</u>
214.49	745.33
<u>120.50</u>	<u>50.61</u>
234.99	694.72
<u>17.80</u>	<u>51.08</u>
252.79	643.64

354.3
65.09
289.21

354.3
60.47
293.83

76-

354.3
73.27
281.03

65.09 507.14
289.21 85.09

21.21 592.23
268 4.48

1.11 596.71
266.89 475.4

13.05 644.25
253.84 50.65

20.50 694.90
233.45

32622
308
32314
304
32010
30.89
28921
44.75
244.46
41.39
202.85
12.42
215.27
11.64
226.97
110.8
337.71

129.26
126.32
25558
12766
38324
12390
50714
179.5
686.64
82.82
769.46
25.76
743.70
24.13
719.57
666.49
53.08

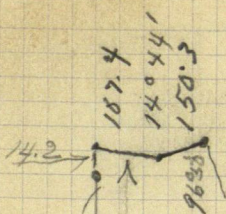
261.03
67.66
213.37

9573
286

57438
76584
19146
2737878

76

3 52.5
383.4
386.9



284.8'

3,460.85

637.3'

between p's

352.5

318.7
33.8
352.5

352.5
351.6
284.8
352.5

352.5

$$\begin{array}{r} 352.5 \\ 35.2 \\ \hline 316.9 \\ 33.2 \\ \hline 637.3 \end{array}$$

$$\begin{array}{r} 354.3 \\ 35.4 \\ \hline 318.7 \\ 83.8 \\ \hline 402.5 \end{array}$$

$$\begin{array}{r} 637.3 \\ 352.5 \\ \hline 284.8 \end{array}$$

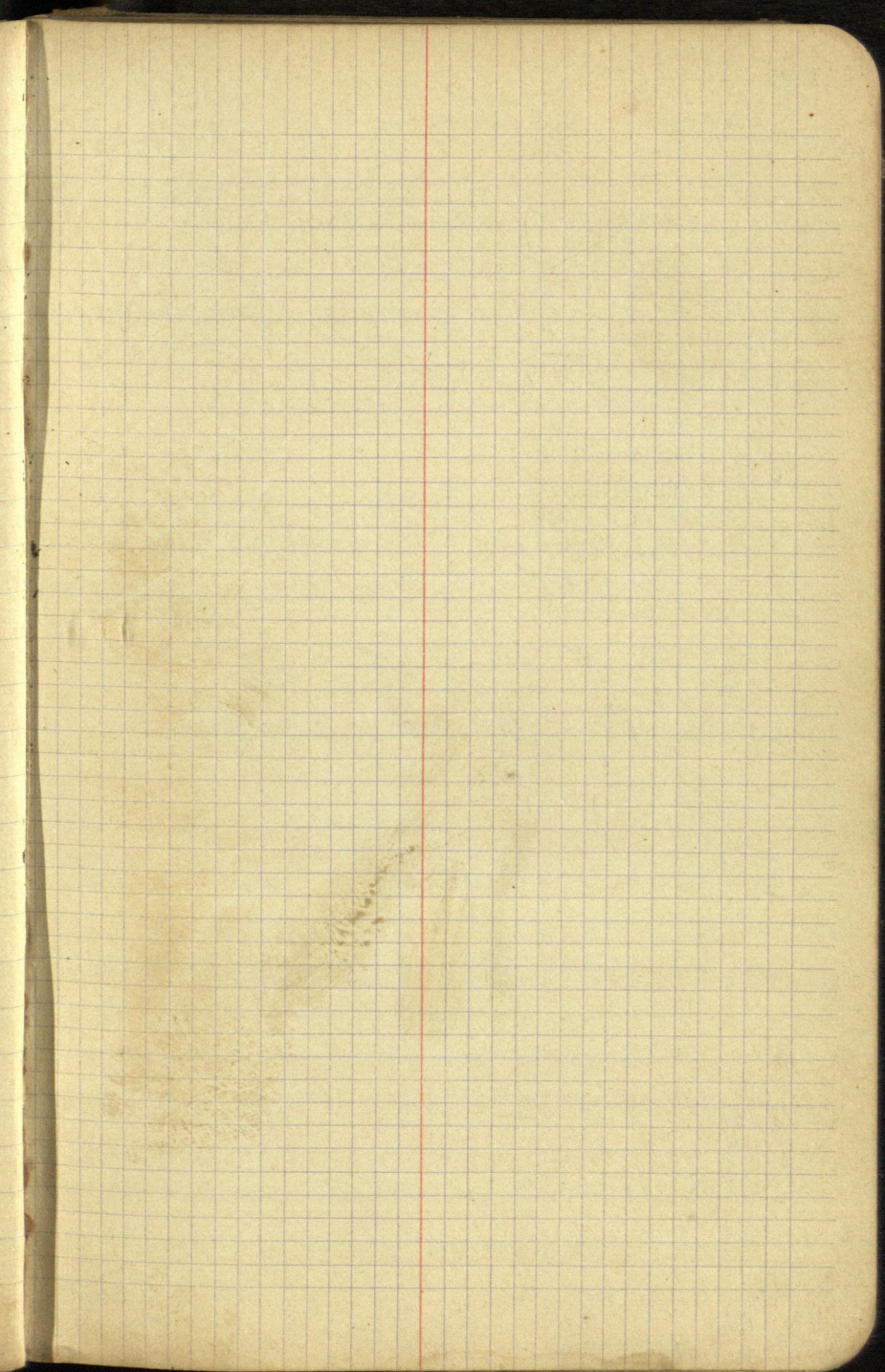
E	W		
106.24		421.9	
143.76		671.35	106.24
	115.67	687.22	250.00
		389.28	250.00
	115.67	392.04	134.330
	134.33	421.9	0.13433
		687.1	0
250.00	250.00		

S. 25-141-311

Interior calculations.

$$3941 : 1858 : 132.2 : X$$

$$\begin{array}{r}
 32.2 \\
 \hline
 3716 \\
 3714 \\
 \hline
 5574 \\
 3941 \overline{) 598276} \quad 15.1 \\
 \underline{3941} \\
 20417 \\
 \underline{19705} \\
 7126 \\
 \underline{3941} \\
 31850
 \end{array}$$



82

2701.69

2765.4 : 2870.5 :: 1320 : x

13 20

3741 00

86115

28705

27654 3789 0600 1370.1

29654

102366

82962

194040

193578

46200

190

140

1140

12540

2640

27654

2 | 2701.69

1350.33

1370.2

1500.3

2870.5

2701.69

168.83

9.80

22.42

10.78

3.96

23.04

80.00

Dec. for June 29, 1921

9-A.M.	23°	13' 04"	+ 38	= 23° 13' 42"
		8		
10	23°	12' 56"	+ 30	= 23° 13' 26"
11	23°	12' 52"	+ 26	= 23° 13' 18"
12	23	12' 48	+ 26	= 23° 13' 14"
1	23	12 44	+ 26	= 23° 13' 10"
2	23	12 40	+ 30	= 23° 13' 10"
3	23	12 36	+ 38	= 23° 13' 14"
4	23	12 32	+ 53	= 23° 13' 25"
5	23	12 28	+ —	=

Hawkins Lots.
see 25-142-31.
Sept. 13. 1917. Thursday

E.B. Horst, transit + chain,
Fred Hawkins, chain + flag,
Henry Rice, axeman,

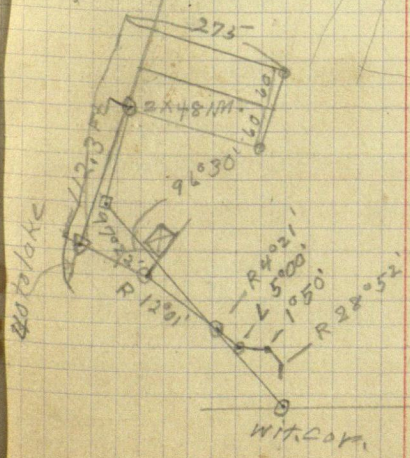
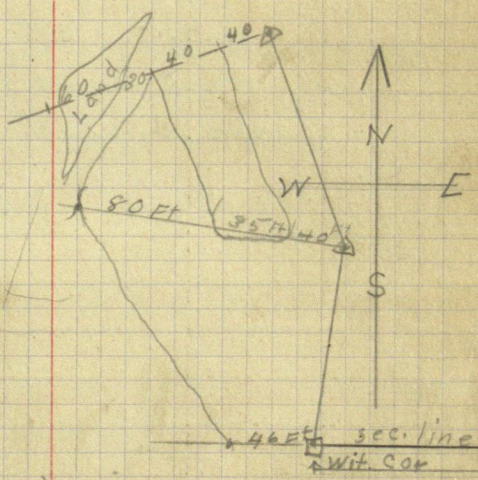
Beginning at S.W. Cor of Lot 1.
as marked on page 52 (this book)

Extend this line of lots S. 112.3 ft.
turn $97^{\circ}22'$ N.E. angle run E 215.8 ft. &

Thence	R	$12^{\circ}01'$	158.4	40 ft to lake
"	R	$4^{\circ}21'$	135.0	" "
"	L	$5^{\circ}00'$	123.4	" "
"	R	$1^{\circ}50'$	240.0	" "
"	R	$28^{\circ}52'$	109.0	W. end of
"	R	$2^{\circ}07'$	150.0	" "
"	R	$27^{\circ}05'$	138.0	to Wit. Cor.
			1669.6	

Hub in line with E side of Hawkins cot NW ang to E.
Side = $96^{\circ}30'$ cottage sets 28.5 FT N of Hub

Boat Harbor



13.5
7.5
80

Sept 14 - 1917. Friday

From N.W. cor of Lot 2 (being stake
along N side) back sight S. on IM. on
S side Lot 1. reverse Turn

Right $12^{\circ}04'$ at 130 Ft Washout. &

Thence. Right $15^{\circ}25'$ 131.3 15 Ft

Thence. Right $14^{\circ}05'$ 133.7 15

Left $4^{\circ}44'$ 121.6 "

Left $16^{\circ}11'$ 265.5 -

Right $3^{\circ}18'$ 152.0 "

Left $9^{\circ}22'$ 166.7 15 Ft

Left $7^{\circ}12'$ 205.6 "

Right $3^{\circ}20'$ 159.7 "

Right $10^{\circ}36'$ 189.0 "

R.M. Work in office platting
above courses and Lake shore

E.B. Horst.

Ft deep 254.5 set angle pt. 20 ft to lake
to lake

"

"

SWP 110.0 ft E extends S. 40 ft.

" 180.0 ft E
to lake

"

200' ft E SWP extends S.E. 180 ft. L.V. Lot line



88

Distance

12°25' L

540'

14°07' L

361.98

23°11' R

257.5

12°04' R

120.04

1123

20

90

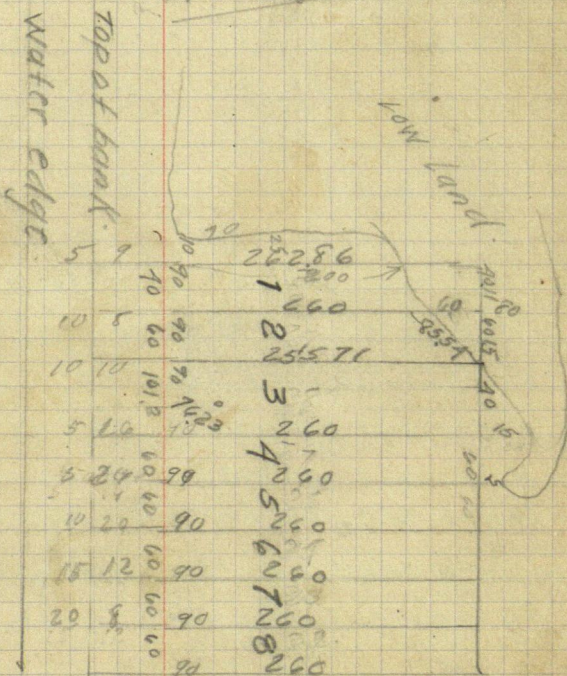
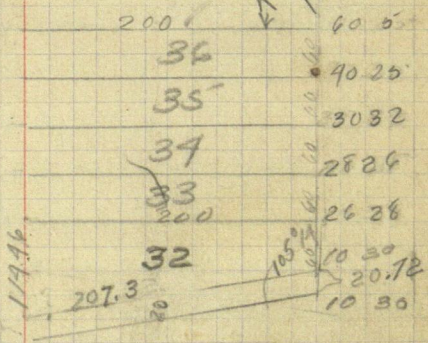
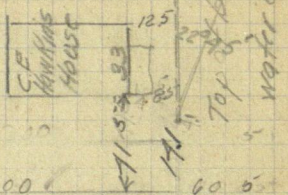
Distance

201.2

13°37'R.

420

25-34
30-31
38.37 chains
U.S. W.C. M.C. Oct 25 & 36
38.37 chains
from S.E. corner 25



Description of Block 1 Located
Known

Beginning at U.S. W.C.M.C. between
 Sec 25 & 86 T142R31W 38.37 chains
 West from S.E. Cor Sec 25 Thence
 N49°06'W a distance of 335.1 thence
 N71°51'W a distance of 14.1 iron monument
 thence S18°09'W a distance of 60' to
 the point of beginning which is
 S.E. Cor of lot 36 thence N8°04'E
 along east line of lot 36 a distance of 260
 Thence N71°51'W a distance of 354.46
 to iron monument N.W. Cor lot 32 thence
 across drive way N71°51'W a distance
 of 20.22' thence N20°55'E a distance
 of 62.44' thence N18°19' ^{15'} ^{15'} E a distance
 of 121.95' thence N38°10'E a distance
 of 372°03' to a point of intersection on
 East line of lot 19 thence N29°03'E
 a distance of 595.6' to a point of intersection
 on east line of lot 10, thence N11°38'
 a distance of 448.6, thence N29°21'E
 a distance of 140.26 to N.E. Cor lot 1
 thence N64°46'W a distance of 272'
 to a point on N.W. Cor lot 1 thence
 by various courses and distances
 along lake shore in a south

in Lots 485, SEC 25-T 142 R 31W
as Breezy Point

westerly direction to SW cor of lot
31 thence in a south easterly
direction along lake shore to
a point on SE cor of lot 1 which
is the point of beginning of this
plat

25-26-141-31.

Jan. 12, 1920.

E.B. Horst, Engineer in charge,
appointed by County Board to
make a survey of Secs. 25-26
T.141, R.31 to begin Jan. 12,
1920.

I take Notes & Plate and
hire a Motor Inn Car to
drive me to Ten Mile Lake
where I look for the M.C.
on the Sec line between
sections 25 & 36 but am
unable to find it on account
of 4 ft of snow drifted in from
the lake.

I go to the N. line of sec. 26
where same intersects the W.
shore of Portage Lake and
make a thro search for
M.C. there but snow is 3 ft.
deep and I decide to quit
work until snow goes away.
E.B. Horst.

secs. 25-26, T. 141 R. 31
30, T. 141 R. 30.

95

Tuesday June 22, 1920.

E. B. Horst,

E. L. Tusler,

Bert. Anderson,

Glenn Bacon,

Drive to Ten Mile Lake and begin
survey of secs 25-26-30 T. 141 R. 30 & 31.
We begin at cor. of secs. 25-36, 30-31
and run N.

at sec. cor. sight W. on N. line of sec. 36
Turn N. W. $\angle 88^{\circ}30'$

at 584.0 ft. N. centre of S. R. H. # 80. N. $68^{\circ}W$.

N. W. - BT Jack Pine 8 $267^{\circ}32'N$

N. Pine 10 N $43^{\circ}30'W$ 29 ft

at.

584.0 State Highway 675. N $68^{\circ}00'W$.

748.8 set hub.

961.4 " "

1126.9 " "

1282.0 " "

1687.7 " "

1907.8 " "

2217.6 " "

2749.0 " "

3273.5 " "

3715.3 " "

4519.5 " "

5069.4 " "

IN MTI, RAILROAD NW.
ANGLE $= 56^{\circ}55'$

5280 set temp point for Cor.

to sec. 24/19.
25/30.

Horst, Mackey, Greene & Goble
go to M.C. on E. side of Portage
Lake (previously established by
Co. surveyor J.M. Greene & Deputy
E.B. Horst. from U.S. B.T.s.), Where
we take the following New B.T.s.
Nor. Pine 9" D. $23^{\circ}34'W$. 10.5 ft.
Nor. Pine 8" orig. U.S. B.T. S. $46^{\circ}03'E$. 4.0 ft.
Weron E. (at $8^{\circ}45'Var$).

4 ft. 57.4 ft. E. Hub.

" 229.5 " " "

" 255.0 " " Stake 8 ft. 5.

We look for $\frac{1}{4}$ S. Cor. & B.T.s. which are
obliterated. continue E.

" 282.5 Pt. A. of Triangulation

" 340.0 Lake.

Set pt. B. on M. & I. Ry. Grade. Set
pt. C. 400 ft. N. on E. side of grade
angle $ABC = 73^{\circ}19'$.

" $BCA = 87^{\circ}01'$

distance B to C. = 400 ft.

" A to B = 1187.0 ft.

1187 + 282.5 = 1469.5 ft.

at 1085.0 E. Iv. Lake

" 1475.8 " E R.R. tracks

" 1600.0 " Iv. swamp

" 1744.5 " Hub.

" 2065.0 " "

" 2208.7 " "

" 3066.7 " P.I. Hub on N. + S.

Random line at 5349.0 ft. N.

~~We reestablish the Section Cor.~~

~~to sets 24-25-19-30-141-30+31~~

~~by topography from U.S. field Notes~~

~~also by intersection of very old~~

~~N. + S. and E. + W. blazed lines where we~~

~~find stumps which agree with U.S.~~

~~field Notes but are badly burned.~~

~~from which we set part. for. sec. Cor.~~

~~from which:~~

~~from P.I. Hub on E. + W. line Sec. Cor.~~

~~Sets Left 16046' 168.5 ft.~~

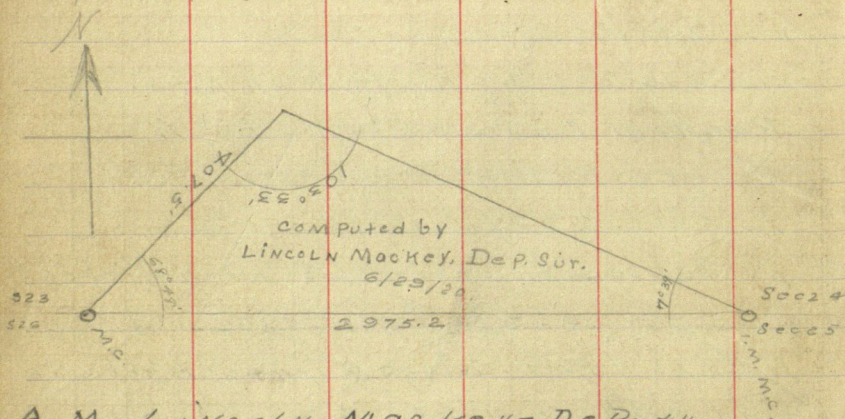
~~at 3225.0 E. Cor. sets N. 48.6 ft.~~

~~S.W. \angle at P.I. $\Delta \approx 90^\circ 50'$~~

98

Monday, June 27, 1920.

A. Mackay with Burdick Anderson,
 Glen Bacon, Mose Morris, E. Tuley,
 Clarence Green, Ray Goble, goes
 to M.C. bet Secs, 23-26 + 14th N. R. 31 W
 on West side of Portage Lake and
 triangulates to M.C. on East side
 of Lake, bet Secs 24 + 25 as follows,



A. M. Lincoln Mackey - Deputy
 Surveyor, with Bob Aylsworth,
 walks to M.C. bet Secs 24 + 26 on
 East shore of Portage Lake and
 sets on I. M. 2" x 47" I set + transit
 over this corner turn angle from
 Random Line Right $\angle 0^{\circ} 26'$ to M.C.
 bet Secs 23 + 26, on West shore of
 Lake.

Lincoln Mackey,
 D. S.

MONDAY JUNE 28, 1920 99.

P. M. Horst, Mackey + Both Crews,
Go to M.C. between 23-26 - SIGHTON
M.C. across Lake and Run West on
RANDOM LINE between 23-26.

at 3512 - West Set hub

433.6 - intersect of SCENIC HIGHWAY -

turn N.W. \angle 40° 15'

522.0 West enter Marsh

700.0 " Leave same

1076.1 " hub

1270.0 " Marsh,

1390.0 " Leave same.

1605.0 " hub

1715.5 " "

1927.0 " Set hub for 1/4 cor. of sec.
23-26. Make thorough search
for old cor. but find no
trace of same.

CONTINUE West

at 2293.0 " Set hub

2662.5 " "

2917.9 " "

3329.0 " "

4050.3 " "

4577.1 Look for cat to sec. 22+23

Get find no trace of same.

Lincoln Mackey
E.B.H.

Horst goes to walk.

Tues. June 29, 1929

Mackey. With Mose Morris,
 Bob. Alsworth, Clarence Green,
 go to hub set at 4642.6 West
 and continue line West set
 sec. 22 & 27.

at 5095.0 West hub.

" 5500.0 "

5790.7 "

6637.5 "

7415.0 "

8009.7 " fall 111.9 South, of

Y. C. Getsec, 22 & 27 - 191 - R314.

I Reestablish this cor from,
 the two Gov. Bits, which I
 find, Both trees show plain
 scribe marks. Recorded

described in Gov. notes as follows.

Yellow pines " N 77° E 1170 chs.

" " 3" S 17° E 107 chs.

I set wooden post 2' x 2" x 24".

Lincoln Mackey

Tues. June 29, 1920, 161

Wed June 30, 1920.

Mackey with Mose Morris, Bob Gwalt,
 Clarence Green, walk
 to hub set at 4577.1 and begin
 a new search for cor to Secs,

$\frac{22}{23}$,
 $\frac{27}{26}$,

I find an old yellow pine
 stump badly burned, I look
 for marks on this stump and
 find part of a B. at bottom.
 I set my instrument over same
 and turn N 55° W and measure.

7.7 feet, on this line, I set a point

I set over this point and
 turn the recorded bearings
 for the other B's. I find
 the, N.W. & N.E. B's. agree
 with recorded bearing &
 distances.

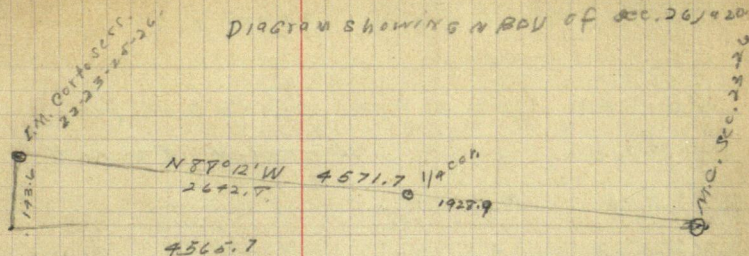
I accept this as true point
 for cor. and set an I.M.
 2' 47" from which,

W. oak 10" S 54° E 60.0

" " 12 N $76^{\circ} 30'$ W 24.5 - this

tree bears an old line B. Log.

Diagram showing N B.V. of sec. 26/27



S 26.

P.M.

I set transit on this cor + run south
on a random line bet secs. 26-27. 141-31.
over rolling land thru timber + brush
at 859.0 south hub.

11 49.7

1320.0 " set temp N 1/4 cor. S 26-27

1677.0 enter swamp.

2095.0 leave same.

2262.3 set hub.

2573.2

2640.0 set temp 1/4 cor. sec. 26-27.

make there search for old
cor but find no trace of same

2798.0 enter swamp.

2967.0 leave same

3049.4 hub.

3142.0 enter swamp

3442.0 leave same.

3467.5 hub.

3579.0 swamp

3671.0 leave same

3812.5 hub

3960.0 set temp 3d/6 cor. sec. 26-27

104

P.M. Wed June 30, 1920.

4022.0 South Swamp.

4577.0 " Leave camp

4675.4 " do.

4775.3 " "

5199.3 " do.

5270.0 South Set to M P Point Riv.

Get to Secs. 27/28
54 25.

(5 P.M.)

Leave work for following day.

Genie Maching.

Thursday July 7, 1920.

107

Lincoln Mackay - Moose Moose - Bob -
Aylsworth, Clarence.
C.M. Green. 1st. crew.

Earnest Insler, Ray Goble, Shunk Bacon,
Bundick Anderson, 2nd. crew.

Walk to Ten Mile Lake and
Hire Alfred Walker's Launch,
and cross Ten Mile Lake to
temp. point set at 5280.0 South
on my line. Both crews look
for. Cor. to Dec. 26-27-34-35
until noon. find no trace of same.
P.M.

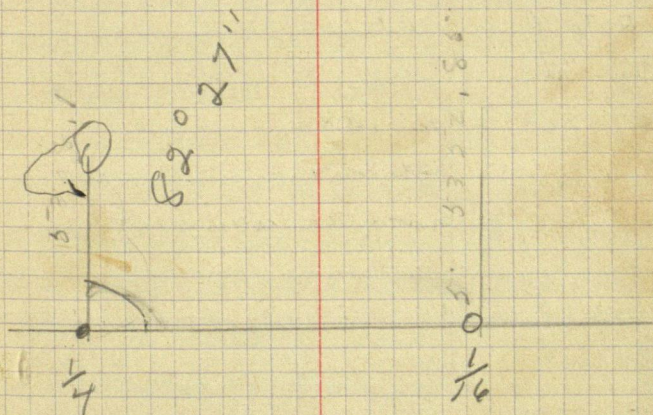
I set my transit over 5280.0
hub and continue my line South
bet. Dec. 34 & 35 for the purpose
of finding M.C. on Ten Mile Lake,
bet. Dec. 34 & 35.

at 5341.0 South Meadow
5487.4 " P.I.
5798.0 " Leave Meadow,
5811.7 " hub
5760.0 " Swamp.

66311.0	Leave Swamp.
6667.4	Hub.
6758.4	"
7406.8	"
7507.9	"
7750.6	"
7748.0	Swamp.
7900.0	Hub Swamp
8100.0	Leave Swamp
8171.8	Hub
8265.0	old tote road bearing SW & N
8296.8	Hub
8795.9	"
9032.0	" 32' North of water's edge
Look for M.C.	

$\frac{1}{4}$ 5-3 57.8 PI MC Portage. 109

$\frac{1}{16}$ 1346.1 = 1881.9 East.



Monday July 5

Mose Morris. Ray Goble & Bob
Alysworth. in Goble's (Car?) go to
Ten mile lake in A.M. & look for Sec
line bet. Sec 25. & 26. find line Est.
Gal. Pipe with cap at Mc. Ten mile
also at Portage lake

141-31 - S. 26-25

111

Tues. July 6, 1920

Horst & 2 crews, hire Bill Bush to take us to M.C. bet. secs. 34-35-141-31 on w. side ten mile Lake (charges \$2.00)

We find U.S.B.T. stumps of the

N.P.B.T. 14 N. $72^{\circ}E$ 11-14s.

Birch & N. $82^{\circ}W$ 19-14s. from which we set a wood post for true M.C.

New Bearings as follows.

Nor. Pine 12" N. $60^{\circ}25'E$ 41.3 ft.

J.P. 12" N. $79^{\circ}33'W$ 16.8 ft.

At sta 9032.0 ft. S. on random line the true M.C. sets. N. $71^{\circ}52'E$ 92.0 ft.

at sta. 9003.6 ft. S. M.C. sets. E. 87.5 ft.

We walk N. on random line to a point near the point for sec. cor. of secs.

26-27-34-35 both crews look for cor. and B.Ts. until 4 PM. we decide the cor. is obliterated.

We begin at the M.C. No. 12 which we re-established from the U.S.B.Ts. and run E.

I sight across arm of Ten Mile Lake and set pt. B. of triangle

turn L. $31^{\circ}43'$ run 232.0 ft. angle at C. = $130^{\circ}47'$

Distance A. to B. = 584.2 ft. + 22.5
 at 606.7 ft. the true M.C. No. 11,
 sets S. 4.8 ft. we find both trees marked.
 I take following New B.T.s
 W.P. 12" N. 29°30'E. 12.7 ft. }
 W.P. 10" S. 20°15'E. 19.9 ft. }

I set transit over this M.C. back
 sight on M.C. No. 12 and run E.
 at 168.5 set Hub, at 323.0 ft. set
 a point on west side of arm of Ten
 Mile Lake. look for B.T.s all gone
 I set a point on E. side of Lake
 cross over and set over point
 and turn S.W. angle 103°00 chain
 base line 150 ft. angle at C. = 63°57'
 Distance A. to B. = 597.0 ft.

The true M.C. No. 9 previously
 estab. by E. B. Horst. from U.S. B.T.s.
 sets N. 3.6 ft.

I set over M.C. 9 Backsight W. to
 pt. A. and attempt to sight E. on
 old random but Brush are too high.

E. B. Horst.

Malkey quits tonight

Wed. July 7, 1920

Mast & crew begin at MC. at SW.
 cor. of Crescent Beach and
 Meander Ten Mile Lake as follows:
 Sight N. on Sec. line bet. 25 & 26 Thence,

S. $78^{\circ}15'$ W. 389.0' ft.	R. $78^{\circ}15'$ = 1
S. $67^{\circ}00'$ W. 191.0' "	2
S. $31^{\circ}00'$ W. 306.8' "	3
S. $22^{\circ}15'$ W. 222.0' "	4
S. $31^{\circ}30'$ W. 269.0' "	5
S. $0^{\circ}45'$ E. 309.5' "	6
S. $22^{\circ}30'$ W. 305.5' "	7
S. $39^{\circ}30'$ W. 150.0' "	8

From MC. No. 9 I backsight on MC. No.
 11 & run E, to Ten Mile Lake. U.S.M.C. #8
 I set WC.M.C. 28 ft. W. of water.
 New B.Ts. as follows: * from WC.M.C. I
 sight to MC. E. of Ten M. Lake, def. angle
 = $L. 1^{\circ}20'$

X B.Ts. Bass Wood 12" N. $21^{\circ}45'$ W. 240 ft. } WC.
 W.C.M.C. #8 W. Oak 14" S. $41^{\circ}15'$ W. 136 ft. } MC.

continue Meanders of Ten Mile S. to sec. line
 Thence S. $41^{\circ}30'$ W. 346.7 ft. To WC.M.C.
 bet. Secs - 26-33, Sec. Line R. $49^{\circ}37'$

at W.C.M.C. No. 8. I backsight W. on line
foresight E. across Ten Mile and
turn L. $1^{\circ}20'$ to M.C. on E. side of
Lake.

I go to M.C. on E. side backsight E
on line transit telescope and turn
L. $1^{\circ}11'$ to W.C.M.C. on W. side.

Morris and Tusler begin at cor
to secs. 22-23-26-27 and back
sight S. on random line and
run N. at 1860.0 Mont. swp (E+W)
at 2640 look for $\frac{1}{4}$ S. (gone)
at 4664 intersect S.R.H. No. 80
at 5111.4 the I.M. at cor to secs.
14-15-22-23 sets E. 74 ft.

E.B. Horst.

✓

Thurs.

115-

July 8, 1920

From I.M. at M.C. bet. Secs 25 & 26
at S.W. cor. Crescent Beach. sec. line = N.
thence

S. $79^{\circ}30'$ E. 533.0 ft.

S. $73^{\circ}15'$ E. 739.0 ft.

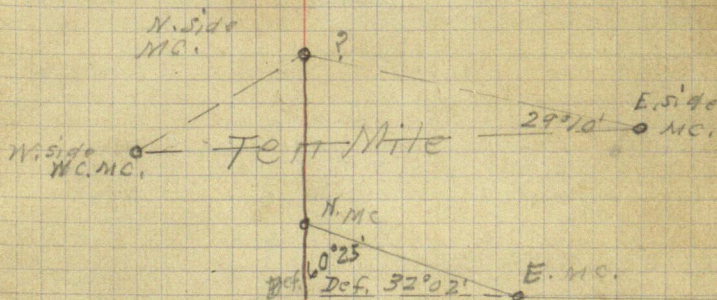
S. $65^{\circ}30'$ E. 501.0 "

S. $54^{\circ}30'$ E. 861.0 "

S. $45^{\circ}30'$ E. 437.0 "

S. $34^{\circ}36'$ E. 331.0 " (to M.C. bet. Secs. 25 & 26)

(S. $89^{\circ}01'$ E. on sec. line)



S. $89^{\circ}01'$ E
S. $89^{\circ}45'$ E

N. $89^{\circ}45'$ W	15'
N. $89^{\circ}01'$ E	56'
	71'

116

July 10

Inster globe green. even
 set H. B. transit over $\frac{1}{4}$ ^{13.25-7} P. I. M.
 Turn angle. n. w. $93^{\circ}45''$
 and run north.

at Sta. 356.9 hub.

" " 702 c. l. state road.

" " 716 swamp.

1241 leave swamp.

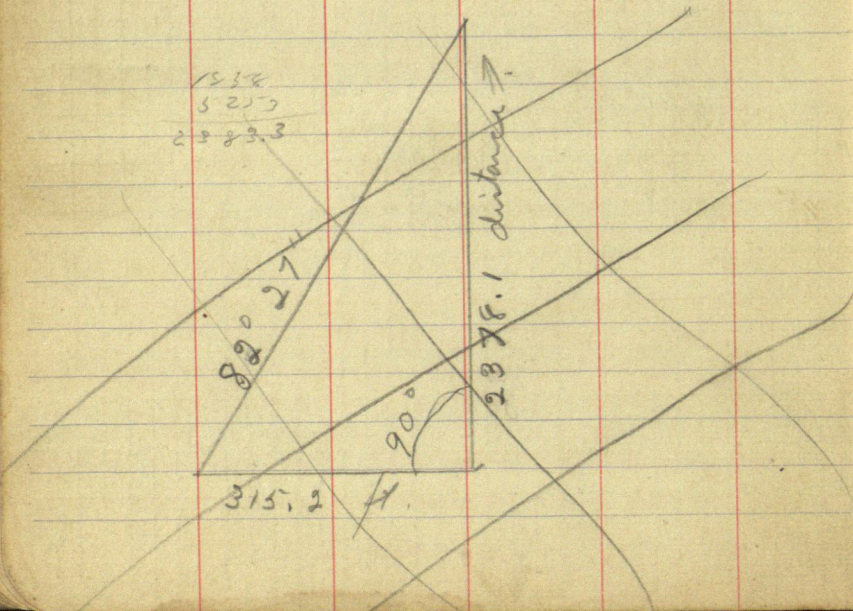
1298 hub.

1344 swamp.

1775 leave swamp.

1858 hub.

Angle 90° west base line.
 315.2.



at 4236.1 hub.

90° offset east 811.5 ft.

turn 90 angle from sec line.

at 1475.8 hub.

we find this line 55-81.7 to be corrected

118

July 14.

Inster. north anderson Bacon.
goble green.

Lake Transit and go. to sec cor.
24-25-19-30-141-31-141-30

and run line east between sec.
19-30 on $8^{\circ}45''$

at 165.4 leave swamp.

at 378.1 hub.

at 561 swamp.

at 759 leave swamp.

" 1023 old road N-S

" 1084.3 hub.

" 1412.4 tempt $\frac{1}{6}$ cor.

" 2005.0 hub.

" 2441.3 hub.

" 2567.4 swamp.

" 2732.4 tempt $\frac{1}{4}$ cor. (at 2617.5)

Found old post 105.6 south of
line with no bearing trees

Continue east on random line.

" 2897.4 leave swamp.

" 3920.4 swamp.

" 4052.4 tempt $\frac{1}{6}$ cor.

" 4184 leave swamp.

" 4195.6 hub.

(next page)

July 14

119

at. 45-34.2 hub.

" 47 77.0 hub

57 08.4 hub.

Quit for night

July 15th (Foster Birthday)

Foster now is Anderson. Bacon.
goble green.

Go to hub 57 08.4 and look for
bearing trees for rec cor to rec.

19-28-29-30 B.T. as follows.

y P. 15° N. 49½° W 50

W P 10 S 20½° W 38

W P 13 S 43° E 11

Sant 12 N 46° E. 66.

we fail to find these trees but find
stumps that check close, but do not
use them.

S. 19-30

Friday July 16, 1920.

T. 141, - R. 31,

Horst, Tusler, Morris, Anderson,

Bacon, Green & Gobel.

Morris & Tusler re chain E. line of
Sec. 25 and find 100 ft. Error bet.

stations 4 & 6. (5 lost on first chain)

Horst & crew complete N & S $\frac{1}{4}$ line of
Sec. 25, as follows:

At 1858.0 N. sight N. across lake
& set pt. B. of triangle, cross over
backsight S. and turn L. $85^{\circ}45'$
and chain 261.3 ft. Base

$$\angle A.C.B = 86^{\circ}44'$$

Distance A to B = 1994.3 ft.

From pt. B. sight N. & turn L. $6^{\circ}00'$ & set a pt. D. on N. side of second
lake, $\angle C.B.D. = 88^{\circ}15'$, $\angle D.C.B. = 84^{\circ}26'$

$$\angle B.D.C. = 7^{\circ}19'$$

Distance across second lake =

2042.1 which is N. of E. & W. sec. line

From pt. D. I sight S. to pt. B. & turn R.

 $14^{\circ}00'$ to pt. 282.5 E. on sec. line

and from pt. B. I turn L. to pt. on

sec. line in Mt. I. Ry. 1975.8 ft. E.

distance from pt. D. S. to sec. line

$$= 747.3 \text{ ft.}$$

(Diagram on following page.)

121

1324.4

1315.13

11

11

11

11

122

July 14.

P.M. E.L. Tusler leaves on
Private business.

Horst + crew set I.M. at $\frac{1}{4}$ S. cor.
on Rge. line bet. secs. 23 + 30

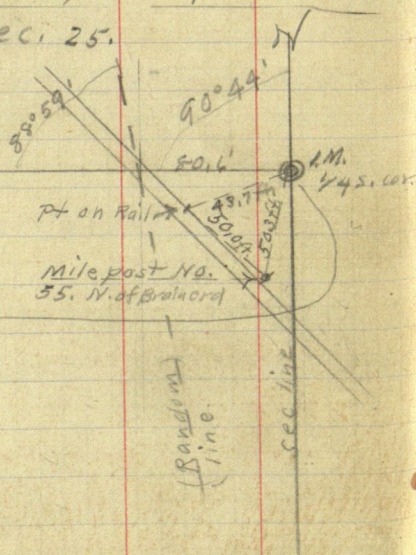
at 2648.8 N. + 80.6 ft. E.

From which we turn N.W. angle
 $90^{\circ}49'$ from true sec. line,
($88^{\circ}59'$ from random), and run W.

on E. + W. $\frac{1}{2}$ sec. 25.

Ref. Pt. to $\frac{1}{4}$ S. =

E. + W. $\frac{1}{2}$



Incorrect.
see page 143.

at. 602.0 W. Hub.

" 1115.9 " "

" 1244.0 " P.I. on E. $\frac{1}{4}$ line, 2645.7 N.

" 1254.0 " temp. Pt. E. $\frac{1}{16}$

" 1704.5 " Hub.

at 1918.4 W. triang. Hub.

set a Hub W. of lake. then with
transit still on same Hub, I turn
L. 25° to pass lake and run SW.

at 100 ft. swp.

" 280 " 1r. swp.

" 330 " cent. of High pt. W. end.

" 433 " ent. same swp.

" 599.3 " Rl. on N & S. Φ at 2383.3 W.

" 862.9 " thence Right $109^{\circ}45'$ 377.8 ft.

back to $\frac{1}{4}$ line thence continue W. on Φ
0.0 W. 1r. swamp.

at 101.5 Hub.

" 353.0 swamp.

" 918.0 1r. "

" 964.5 Hub.

" 1045 swamp

" 2140 1r. "

" 2142.5 Hub on seawall E. of Portage L.
thence L. $40^{\circ}38'$ 452.4

R. $32^{\circ}56'$ 159.6 to MC. on sec. line

at S. end of Portage L.

\angle at Hub 2142.5 to MC. = L. $32^{\circ}05'$

(at MC. from sec. line R. $58^{\circ}33'$ to Hub 2142.5)

(S.E. \angle of Φ to W. sec. line = $90^{\circ}38'$)

E.B. Hunt.

124 Sat.

July 17, 1920

Morris + crew on Meanders of
Portage L.

From a point on sec. line 18.3 ft. N
of M.C. on E. side of lake,

thence S. 1° E. 160 ft. A.P. 1

S. $8^{\circ}15'$ W. 200 ✓ 2

S. 1° E 250 ✓ 3

S 26° W 330 ✓ 4

S $52^{\circ}15'$ W 400 ✓ 5

S $38^{\circ}30'$ W 200 ✓ 6

S 52° W 300 ✓ 7

S 44° W 300 ✓ 8

S $48^{\circ}45'$ W 200 ✓ 9

S 41° W 400 ✓ 10

S 33° W 940 ✓ 11

S $84^{\circ}15'$ W 236.5 I.M. 12

North South East W.

150.2 3.1 18.3

155.2 38.7

197.9 28.7

250.0 4.4

296.6 144.7

244.9 316.3

156.5 124.5

184.7 236.4

215.8 208.4

131.9 150.4

301.9 262.4

788.4 512.0

23.6 235.3

2847.4 43.1 2237.4

535.0

2773.2

43.1

2730.1

127

Sec-30-141-30

Thur July 8

Morris. Goble Bacon & Green

Picked up line from Sec cor 3031

East Run by B.B. Bartlett.

444.9 Hwb

580.0 SWP

700.0 leave

910.0 SWP

1482.7 $\frac{1}{4}$ cor. set by B.B.B.

1561.0 @ State H.W. 80

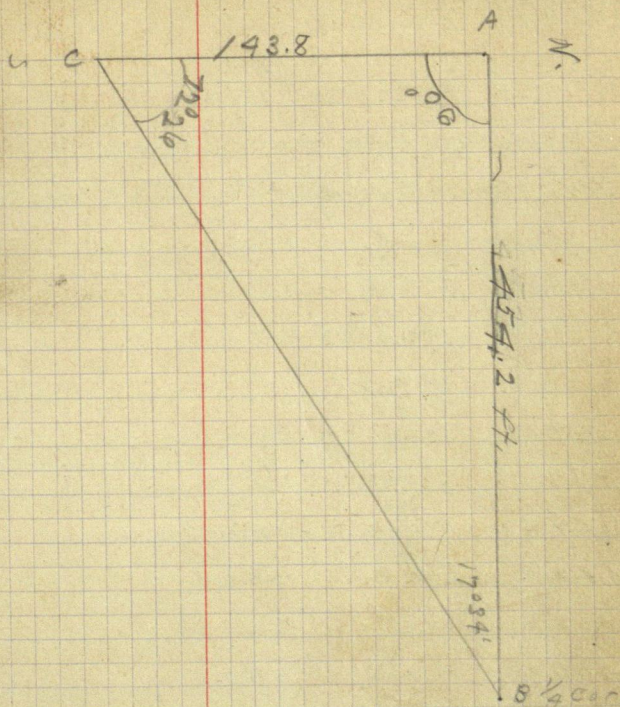
1964.0 live SWAMPed

2204.0 Hwb

2216.0 @ R.R. SWP

2416.3 Δ Hwb
~~2466.0~~
~~2466.0~~

from this Hwb A. set Point B. across
 SWP. at $\frac{1}{4}$ cor. Turned 90° Angle from Pt A
 set Pt C. Triangulation on next page



Total Distance from sec cor E to $\frac{1}{4}$ cor

2870.5 ~~2765.4~~

Gov. Dis. 2765.4 Gov Dis of W 40. 2190 - 1445.4

Our Chain 2870.5 \div by Gov Chain 2765.4

= 1.038 - X Gov Dis. of 1st Fraction =

1500.3 - for West 40 \div 1370.2 for East 40

New B.T. Tam. 8 S. 55° W.

Tam. 6 N. 62° 45' E.

129

S-3

Fri. July 3

Morris. Anderson. Alsworth. Gable. Green
& Bacon in AM.

Con. line E set $\frac{30}{31}$ our falling. South
of $\frac{1}{4}$ cor 6.2

348.0 Hwb

824.9 Ive. SWP

1262.8 Hwb

1320.0 Tem $\frac{1}{6}$ cor

1477.0 Hwb

1725.8 Hwb

1800.0 SWP

2000.0 Ive

2066.0 Hwb

2160.0 SWP

2270.0 Ive

2377.5 Hwb

2489.4 Hwb

2560.0 SWP

2640.0 Set Tem. Pt for Sec. cor $\frac{30}{31} \frac{29}{32}$

Look for Sec cor but fail to find same

Sat. July 10

Morris, Anderson, Aylsworth & Bacon
 Turned $88^{\circ}14'$ ^{N.W.} Angle from E. $\frac{1}{4}$ Cor on S
 of Sec 25 run North

Leave Swamp	129.0
Hub	280.0
Swamp	399.0
Leave Swamp	859.0
to State Road	927.0
Hub	979.0
Swamp	1084.0
Leave Swamp	1200.0
Hub	1257.8
Swamp	1308.0
Leave Swamp	1984.0
Hub	1762.4
Swamp	1914.0
Leave Swamp	2109.0
Hub	2163.0
"	2451.3
"	2737.1
"	2953.5
Swamp	3059.0
Leave Swamp	3219.0
Center R.R.	3448.3
Hub	3517.0
Swamp	3786.0
Leave Swamp	4449.0
Hub	4520.2

Swamp	4684.0
Leave	4784.0
Hub	5105.6
P.I.	5234.0
fell	140 E of C&N
$\frac{1}{16}$ Cor	5262.2

Monday 19

Morris, Anderson, Green, B... & ...
 go to Ch. 1724.4 on Randow line set
 Sec. 25-30 set up over the hub and sight
 on Hub North on Randow line. set
 Hub at 1424.4 Randow - 1324.4 true
 set over this Hub & sight on N Hub
 turn left angle $88^{\circ}44'$ turn tel.
 over & sight E 40.3 & set I.M. for $S\frac{1}{2}E$
 corner line W

874.5	Hub	
1202.8 P.1 N&S	$\frac{1}{16}$ line N	1323.3
1777.4	Hub	
2071.8	Hub	
2396.4 P.1.	$\frac{1}{4}$ line N	1322.1
2574.7	Hub	
2668.0	Enter	Swamp
3450.0	ve.	"
3575.0	Hub	
3785.0	State Road	
3880.7	Hub	
4076.4	Point on Ten Mile Lake	E of
A.P. 2 -	129.1	

Tues. 20 Meandering W side Portage

Morris. Trusler. Anderson. Set up at 1 M.

M.C. on W side Portage. Sighted across Lake
Set Pt. E of 1 M 22 XS on Lake shore

			links	S.	E.	W.
A.P. 1	S. 7°45'	W.	200	1982		27.0
2	S. 41°00'	W.	450	3396		295.2
3	S. 7°45'	E	400	3424	539	
4	S. 12°00'	E	350	970	728	
5	S. 14°00'	W	100	814		24.2
6	S. 54°30'	W	100	3191		58.1
7	S. 24°00'	W	350	2403		142.4
8	S. 16°00'	E	250	2967	684	
9	S. 8°30'	E	300	1455	445	
10	S. 14°00'	W	150	2923		36.3
11	S. 40°30'	W	450	1958		292.2
12	S. 11°45'	E	200	2331	407	
13	S. 54°15'	E	400	1206	3246	
14	S. 36°30'	E	150	471.3	892	
15	S. 19°30'	E	500	2250	1669	
16	S. 50°00'	E	350	3957	2681	
17	S. 66°30'	E	1085	1 M.		

Note (Chained with a 50 link Gunter's chain)

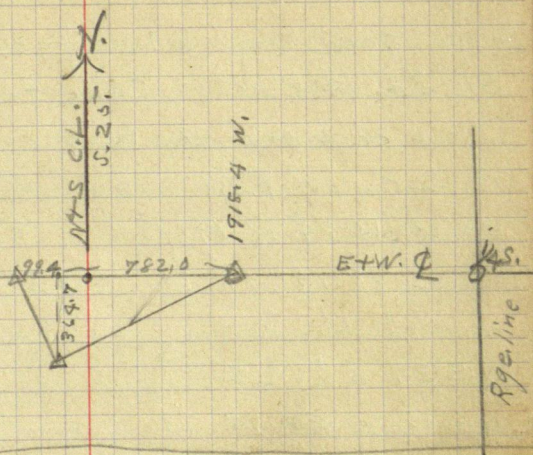
July 20 cont.

Horst, Bacon, Green & Gobel.

Go to sta. 4073.2 = sta 3973.2 N, and set
the N. $\frac{1}{16}$ S. cor. ^{1 M.} bet secs. 25-30 from
which we turn N.W. $\angle 89^{\circ}29'$ from random
= $91^{\circ}14'$ from true line and run W. on N. $\frac{1}{16}$
line of sec 25.

- | | | | |
|------|------------|-------------------------------|---|
| at | 121.0 ft | W. | Hub on random |
| " | 468.0 " | " " | ent. swp. |
| " | 500.0 " | " " | lv. " |
| " | 894.5 " | " " | Hub. |
| " | 1135.0 " | " " | ent. swp. |
| " | 1287.0 " | " " | P.J. on E. $\frac{1}{16}$ line at 3953, |
| ft. | | N. on E. $\frac{1}{16}$ line. | |
| " | 1400.0 " | lv. swp. | |
| " | 1600.0 " | " " | centre of Mt. R. Ry. |
| " | 1677.0 " | " " | Hub |
| " | 2072.0 " | " " | Hub. |
| " | 2144.0 " | " " | ent. swamp. |
| " | 2558.0 " | " " | intersect N. & S. \angle at |
| | 3994.6 ft. | N. on \angle . | S.E. $\angle = 87^{\circ}47'$ |
| " | 2824.0 | cent. of creek | N. & S. |
| " | 3580.0 | lv. swamp. | |
| " | 3663.7 | | Hub. |
| " | 3754.0 | | " |
| " | 3793.0 | | Temp. SMC. portage L. |
| " | 3836.5 | | Hub at edge of Lake |
| Fall | 16.8' S. | of AP. | No. 7. |

Diagram to Notes on page (123)



P.M. all work in 1 crew.

We go to sta. 3940.8 on E-W. C. set pt 7.3 ft. S. of random line turn $91^{\circ}22'$ S.W. < and run S. on W. $\frac{1}{4}$ line to Ten Mile L.

at 200 ft. S. in SWP.

" 292.0 ft. S. Hub.

" 603.9 " " "

" 768.0 " " "

" 1130.7 " " "

" 1272.0 " " C. State Road N.W. S.E.

" 1288.8 " " Pl. on S $\frac{1}{4}$ line at 3997.6 W.

" 1327.8 " " Hub.

" 1400.0 " " set Temp S.M.C. Ten Mile L.

" 1428.0 " " Ten Mile Lake.

E.B. Hunt.

135

July 21.

Harst. Tusler. Bacon. Goble. Morris
 go to town line & look for Sec. cor. of sec^s
 31-32. Gov. Notes call for W.P. 20 N 67 W 33
 P. stub 22 N 60 E 96. fail to find any trace
 of cor. in P.M. walk N on Range to
 cor. of 13-24. 18. 19 - 90 E & look for cor.
 of sec. 18. 19 - 17-20 find no trace of
 any B.T.^s Gov Notes call for
 W.P. 24 S 57½ E 37
 Pop. 12 S 55 W 77
 " 7 N 42½ W 107
 W.P. 24 N 26 E 227

July 22

Harst. Tusler. Bacon. Noble. Morris

Start at Tem. cor for sec 30-31 - 2640 East
 of Gov. $\frac{1}{4}$ cor Bet. 30-31 - run south
 on $8^{\circ}45'$ var. Look for $\frac{1}{4}$ cor. B.T. 2 Poplars
 fail to find ANY trace of them. Heavy
 brush. Swampy. At 4100 quit. for day

July 23.

rain most of day so we
 stay in camp.

July 24.

July 26

A.M. Tussler, Smith, Green, Bacon
 Goble, Morris. Com, line from
 run on July 22 - at 5424.8 inc,
 EBW line run by B.B.B. Chained W
 from sec cor 5-6. 140-30 to our inc,
 328.6

P.M. Same crew
 go to sec cor 19-20-29-30
 Set Transit up over a tent
 point that checked from stumps,
 and run south on 8° 45'
 and at 5451.6-8. P I
 and at 30.8-5 P I
 we run south.

108.3 hub.

346.8 hub.

502.3 hub.

654.7 hub.

1120 enter swamp.

1320 Point in swamp.

1820 leave swamp.

1899 hub.

2011.3 hub on hill

2369 enter swamp.

2640 tent stake in swamp.

5.19-30

next. Page.

2831 leave swamp.
 2932.3 hub.
 quit for night.

July 27. At m.

Tussock. morris Smith green
 goble. continue south on random
 line from hub. 2932.3 as follows.

at 2975.0 c l. R. R.

3216.0 hub.

3361.8 hub.

3518.6 hub.

3540 swamp.

3633. c l. east branch. I maps.

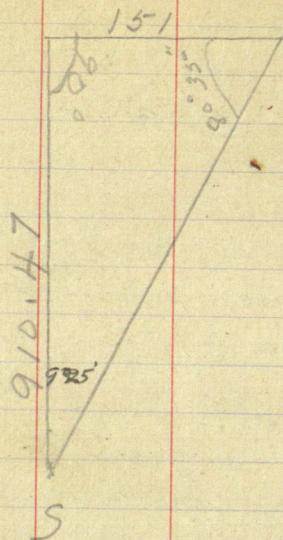
3846.2 hub.

4364.0 a. p. hub. D.

P. M.

Harst morris Tussock, goble. Smith
 Bacon green. continue south.
 on random between sec. 29-30
 we triangulate lake Billie
 as follows.

on next Page.



at hub 2489.4 E. on east and west
random line between sec 30 - 31 we
set P.I. on random line between sec.
29 - 30. N. W. = $85^{\circ} 11''$

PI on east and west line = 2911.2 E.
PI N-S line = 5493.7-S.

at 32-33.5 hub. east.

3519.3 hub east.

quit for night - a. M

July, 28.

Harst Surber. Smith globe. Brown
green.

continue random line east.
between sec. 29 - 31.

next Page.

5292.7 me find $\frac{1}{4}$ sec cor.
between sec 29-32

sets N 133.2 of handson line maitha,
cor sets 50 ft^s of middle of lake
maitha

P M
Hart Swale now is able with Bacon-
green. go to where sec cor 29-30-
31-32. was supposed to be and look for
bearing trees according to government notes.

E. B. Horst.

By E. L. Linsley.

July 29, 1920.

Full crew works.

Tusler + R. Goble go to N.E. Cor. of sec. 30 and intersect E+W. and N+S. Random line. S.W. $\angle = 92^{\circ}20'$ PI at 5451.6-E. and 30.8-S.

Then go to N.W. Cor. of sec. 30 and examine Cor. set by Lincoln Mackey for N.W. Cor. sec. 30.

P.M. We find the Original N.E. U.S.B.T. plainly marked from which we run S. $11^{\circ}00'$ W. 35.64 ft. where we dig up the Original Cor. post. 1 ft. under the mass. We find stumps of the remaining B.T.s. but they are burned off at the roots and no marks remain. We set a $2\frac{1}{2}" \times 30"$ I.M. (Capped) where we found the original post.

No objects near for Bearings.

E.B. Horst, E.L. Tusler, Mose Morris, Perry Smith, Glenn Bacon, Ray Goble and Clarence Green were all witnesses to this Cor.

True Cor. sets ^{S. $55^{\circ}15'$ W. 63.0'} L. $34^{\circ}45'$ - 63 ft. from False Cor. Brg. From E+W.

Random line.

From P.I. Hub. the cor. sets L. $6^{\circ}30'$ 110 ft.
E.B. Horst.

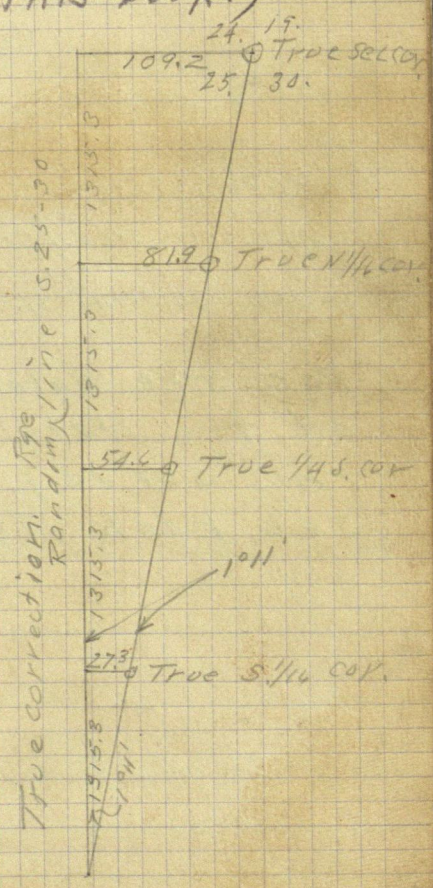
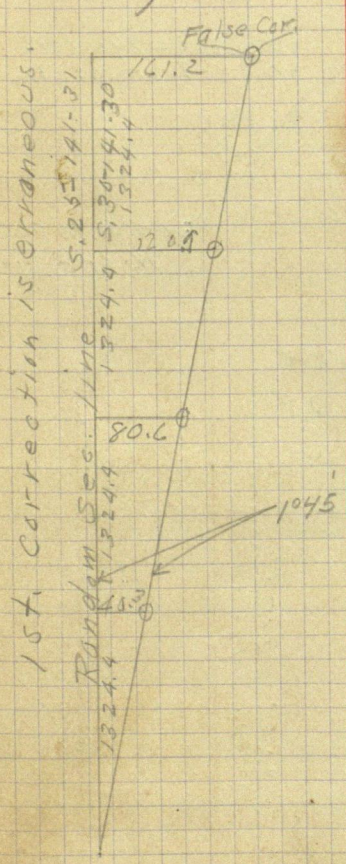
80.6
1612

142

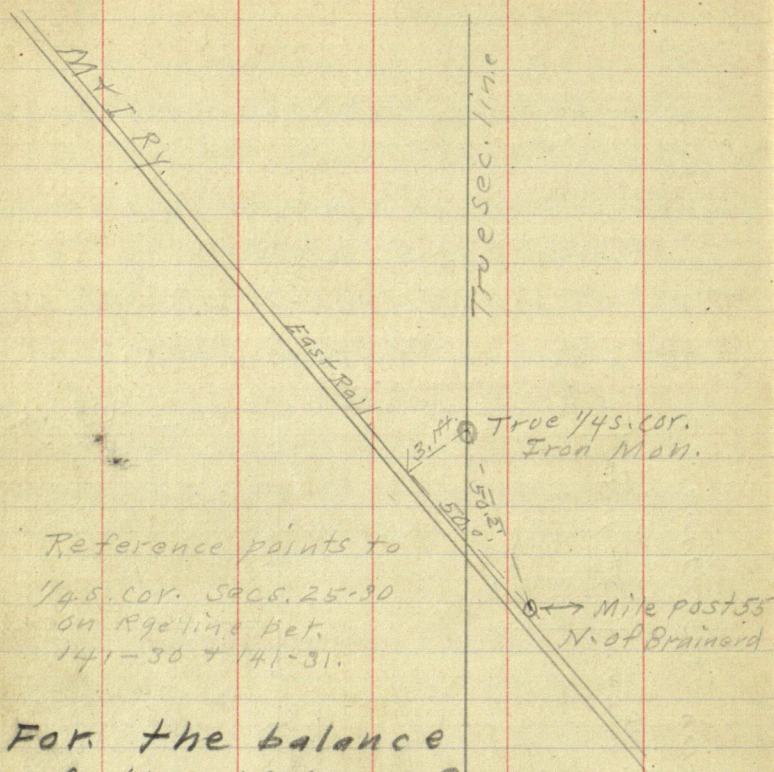
A.M. - July 29, 1920.

E.B. Horst, Bacon, & Green stay in
Camp and compute corrections for
setting I.M.s.

Mose Morris and Perry Smith rechain
line running E. from S.W. cor. sec. 30
T.141 - R.30. Distance = 2870.5'
(See page 128. this book.)



143



Reference points to

1/4 sec. cor. sec. 25-30

on Rge line bet.

141-30 & 141-31.

Mile post 55
N. of Brainerd

For the balance
of the Notes of
this survey,
see book 178.

S. 25. 141-31
S. 30. 141-30

144.

1324.8
1315.

145

Sept 1st. 1920 Shingobee to

Tusler Morris Smith Anderson
 In walker in A.M. getting notes
 and waiting for Mr. Batchlor to
 come for our outfit. P.M. leave walker
 for the work.

Sept 2 - 1920.

Tusler Morris Smith Anderson and
 Mr. Batchlor go to P.I. hub at
 S.W. cor of Sec 26 and turn
 Angle. N.E. ANGLE $88^{\circ} 55''$
 Se " $91^{\circ} 10''$

we walk west on old line cut by
 me in a previous survey of sec.
 26. and place transit over hub and
 continue ~~west~~ as follows.

STA	1500	Sup	$\left\{ \begin{array}{l} \text{Sta. 00} = \text{Sta. 7478} \\ \text{Sta. 1500} \end{array} \right.$
	1695.5	hub.	
	1820	leave	
	1942	hub.	
	2187.4	"	
	2737.7	"	
	3000.3	"	
	3690.0	old road.	N AND S.
	3801.5	hub.	
	4126.3	"	
	4811.6	"	

we look for sec cor sec 27-28
33-34 where gov. field notes call
for 4 B. oak but we fail to
find any that show any trace of
ever being marked. we find
several trees belated years ago
for a line east and west, but
only one for a N-S line so we
continue west to look for M. C. on
Bars. lake.

Sept 2nd 1920 E. S. Lusher

Sample runs go to hole 5279.0 and
continue Random line west to lake
we government notes call for
a m. & cor as follows.

N.P. 30 S 35E-18 N.P. 24 N 60 E 43
at Sta 5279.0 hole.
" 5747.5 hole.
6148.0 "
6280.5 "
6853.4 "
7120.8 "
7462.8 .. at lake.

we find M. E M. C. B. T
and set corner also new
B. T. as follows.

Poplar 12 S 26° 27' W 17.2 ft.
over

147

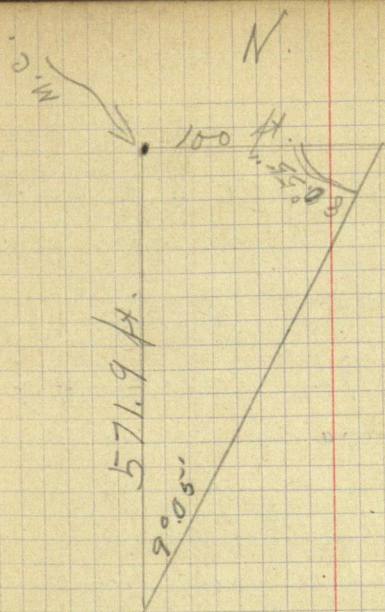
Sept 3 - 1920

at hub 7462.8 M.C. ~~cor~~
 set S $90^{\circ} 52''$ west 105.3 ft
 Total distance of this line to M.C.
 cor. is ~~7487.5~~ 7479.5 ft.

are falling is 103.7 N of M.C.,
 distance from M.C. on floor Pot^t to P.I.
 747.8 Total dis. ~~8228.9~~ = 8227.3 ft.

Sept 4 1920

Tusler Morris Smith (Anderson in
 a.m.) go to sec cor Sec 21-22-
 27-28 where we find three of the
 old B.T. Plainly marked they do not
 check for course but bearing is good
 so we set a 3X3X4 green oak stake
 and cut random line S on $80^{\circ} 45''$ var
 as follows at sta 582.7
 we find the oak B.T. to M.C. cor plainly
 marked also a 16 in w. p. that
 checked for distance and chopped in and
 found a blaze but the ants had destroyed
 all the old marks we set
 2X2X3 oak stake for M.C. cor
 old B.T. still green so we leave them
 we triangulated lake and continue
 S.



at Sta 582.0 ft. I turn 90° angle.
 East 100 ft and set hub. sighting across
 lake set hub. setting transit over
 triangulation hub and read $80^\circ 55''$ to
 random line. hub distance is 571.9
 entire distance from sec cor.
 is 1154.6

we quit work and
 call Horst on phone
 to come and look at a sec
 cor. set by Mackey is a
 previous survey

149.

Sept 6 - 1920

Harst Insler Morris Smith
go to sec car with C. E. Brown
Transit sec 21-22-23

we check on The Stumps that
mackey had for B.T. These stumps
did not check for course nor
distance Harst said he would not
use them so we looked for
old B.T. untill 4³⁰ PM when we
decided it burned and went
to patchman for the night.

Sept 7 - 1920

Insler Morris Smith. Anderson
goes to walk to assist in a survey
go to random line between sec 21-22
and continue south brushing heavy
and we are unable to gain any
help on account of haying so we
work shot a crew untill noon
and decide to quit this job untill we
can get a crew on account of cost

151

Aug 25 - 1926 B.B. Bartlett 1 day 2 1/2⁵⁰
 Expensc 2.50
 Oct. 14-15 - Micky Jude 1 1/2 @ 6.00
 60 in Novisval 12.2

N. 3° 21' E. to M.C. north side of channel

N. 44° 17' E to M.C. 1/4 mile north in Sec. 12

Ran South 3° 04' West to 1/4 Cor. 25-30

True bearing 3° 14'

N. 3° 21' E 72 1/16 Cor.

S. 61° 55' W 201.1' } = 5.57° 01' W 392'

S. 51° 54' W N. 76° 21' W N. 10° 30' E 192.5' } W.C. M.C.

S. 41° 22' W N. 73° 28' W N. 12° 09' E 149.1

S. 32° 43' W N. 65° 08' W N. 14° 43' E 383.3'

S. 42° 13' W N. 58° 58' W N. 16° 58' E 278.1

S. 57° 58' W N. 47° 47' W N. 22° 32' E N. 45° 38' E 497.9'

N. 83° 53' W N. 40° 20' W S. 92° 10' W San. Tower 1 1/4 - Sec 19 431.5

N. 83° 22' W N. 34° 50' W N. 28° 42' E S. 48° 32' W N. 49° 23' E

S. 33° 21' W N. 30° 05' W + 28° 45' E S. 47° 59' W 389.5

S. 51° 55' W N. 22° 35' W N. 22° 19' E 446 - Sand point

S. 48° 35' W N. 19° 20' W N. 30° 34' E N. 41° 19' E 425.7

S. 39° 37' W N. 13° 35' W N. 31° 14' E S. 49° 02' W 269.4

S. 23° 49' W N. 7° 03' W S. 50° 38' W 527.3

S. 34° 10' W 418 S. 51° 28' W 418

S. 51° 10' W 270.0 S. 51° 30' W 321.9

S. 32° 39' W 335.8 S. 52° 21' W F.R.H. 2

S. 9° 56' W 250.6 S. 53° 43' W F.P. 31.1

S. 20° 06' E 97.7 S. 54° 30' W N. 12° 18' E N. 45° 32' W 209.6

S. 67° 25' E 209.8 S. 55° 35' W N. 43° 51' W N. 45° 57' W 441.4

S. 58° 16' E 441.4 S. 59° 03' W 354.3

S. 16° 33' E 70° 29' N. 70° 10' E M.C. U.S. 231.4

S. 11° 33' E 254.13 S. 65° 29' W N. 40° 25' W

N. 70° 10' E to M.C. U.S.

S. 11° 33' E S. 10° 27' E

S. 60° 42' E 231.4'

M.C.

72' North of U.S.G.M. 116-49.4'-M.G.

4' East of $\frac{1}{4}$ Cor. 1 & 0%'

$$\begin{array}{r} 55.98 \\ 80 \\ \hline 4478.40 \\ 2 \\ 1119.6 \\ 2 \\ \hline 22392 \end{array}$$

55.98

112.19 · 6279.5

56095

6	7	0	0	0
---	---	---	---	---

56095

110.050

100971

90790

897.52

$$\begin{array}{r} 2640 \\ 2239.2 \\ \hline 400.8 \end{array}$$

91050

81
- 947

29 1 0

$$77 \frac{50}{100}$$

29

52.50

153

E. M.C.

N. Line Sec. 25-142-31 400.4' S. 88° 17' W.

Top of hill & R 0° 41' 0" 952.8' S. 88° 58' W.

Hub & L. 31° 25' 340.6 to M.C. W. 5.57° 33' W.

5.88° 17' W	400.4'	99955	02996	South 12.0	West 400.2
5.88° 58' W	952.8'	99984	01803	17.2	952.6
5.57° 33' W	340.6'	84386	53656	182.8	287.3
5.82° 38' W				212.0	1640.1
5.82° 38' W	1650.2'	99175	12851		

Oct. 15-16

Jude - Greene 1 1/2 day in field.

134

5.88°17'W

$$\begin{array}{r} 88^{\circ}41' \\ 88^{\circ}58' \\ \hline 31^{\circ}25' \\ 5.57^{\circ}33'W \end{array}$$

134

134

2

0

155					
Course	Dis	Sin	Cos	North	South
N. 3° 14' E	1390	05960	99841		
S. 61° 55' W	201.1	88226	47076		94.7
S. 51° 54' W	192.5	78694	61704		118.8
S. 41° 22' W	149.1	66088	75050		111.9
S. 32° 43' W	383.3	54049	84135		322.5
S. 42° 13' W	278.1	67194	74061		186.9
S. 57° 58' W	497.9	84774	53041		244.1
N. 83° 53' W	431.5	99431	10655		
S. 33° 21' W	389.5	53754	84324		
S. 48° 35' W	425.7	74992	66153		
S. 39° 37' W	269.4	64212	76661		
S. 23° 49' W	527.3	40381	91484		
S. 34° 10' W	418	56160	82741		
S. 51° 00' W	270	77715	62932		
S. 32° 39' W	335.8	53951	84198		
S. 9° 56' W	250.6	17250	98501		
S. 20° 06' E	97.7	34366	93909		
S. 67° 25' E	209.8	92332	38403		
S. 58° 16' E	441.4	85051	52597		
S. 16° 33' E	189.7	28485	95857		
S. 16° 33' E	164.6	28485	95857		
S. 65° 42' E	231.4	91140	41151		
N. 83° 55' E	2100.7	99437	10597		
N. 3° 25' E	2640.0	05960	99812		

13-6

East West

60.3

334.4

283.2

177.4

211.2

151.4

98.5

82.1

207.2

172.2

166.0

240.7

312.6

422.1

311.2

51.2

271.2

187.7

157

$$\begin{array}{r} 2911.2 \\ 2641.2 \\ \hline 270.0 \end{array}$$

$$\begin{array}{r} 1357H \\ 2 \end{array}$$

$$1412.4$$

$$27.148$$

$$1395.2$$

$$264.0$$

$$\hline 17.4$$

$$74.8$$

$$4052.4$$

$$5461.6$$

$$20.8$$

$$\hline 1352.2$$

$$2$$

$$4109.9$$

$$\hline 32.8$$

$$4052.4$$

$$16.7$$

$$\hline 57.0$$

$$2$$

$$\hline 14.4$$

$$4364.0$$

$$1357.4$$

$$4072.2$$

$$\hline 291.8$$

$$8275$$

$$4072.2$$

$$291.8$$

$$\hline 35.7$$

Time Sheet For Shingobee, Tw. Road,
For Sept. 1920.

Sept.	1	2	3	4	5	6	7
E.L. Tusler	1	1	1	1		1	
Mose Morris	1	1	1	1		1	
Ella Smith	1	1	1	1		1	
Bert Anderson	1	1	1 1/2			1 1/2	
E. Horst							

Board Sheet at Batch LOTS.
From Sept. 1st 1920 to Sept 1920.

Sept.	1	2	3	4	5	6	7
Tusler	1	1	1	1	1	1	1
Morris	1	1	1	1	1	1	1
Smith	1	1	1	1	1	1	1
Anderson	1	1	1	1	1	1	1

159

Sec		2	5	4	2	6	14	1	3	0	14	1	3	0
16		17	18	19	20	21	22	23	24	25	26	27	28	29
Host	1	1	S	1	1	1	1	1	4	X	X	1	1	1
mount	1	1	S	1	1	1	1	1	X	X	X	1	1	1
Shuler	1	0	S	1	1	1	1	1	1	1	1	1	1	1
Anderson	1	1/2	S	1	1	1	1	1	1	1	1	1	1	1
Bacon	1	1/2	S	1	1	1	1	1	1	1	1	1	1	1
green	1	1/2	S	1	1	1	1	1	1	1	1	1	1	1
goble	1	1/2	S	1	1	1	1	1	1	1	1	1	1	1

Perry Smith

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
July																														
Indes.	S	1	1	1	1																									
Morris	S	1	1	1	1																									
Goble	S	1	R	1	1																									
Anderson	S	1	R	1	1																									
Green	S	1	R	1	1																									
Brace	S	1	H.	1	1																									
Horst																														

Dec 2 ~~5726~~ 141 - 31

161

-1918.4

282.0

99.4

2143.5

49423

39 59.6

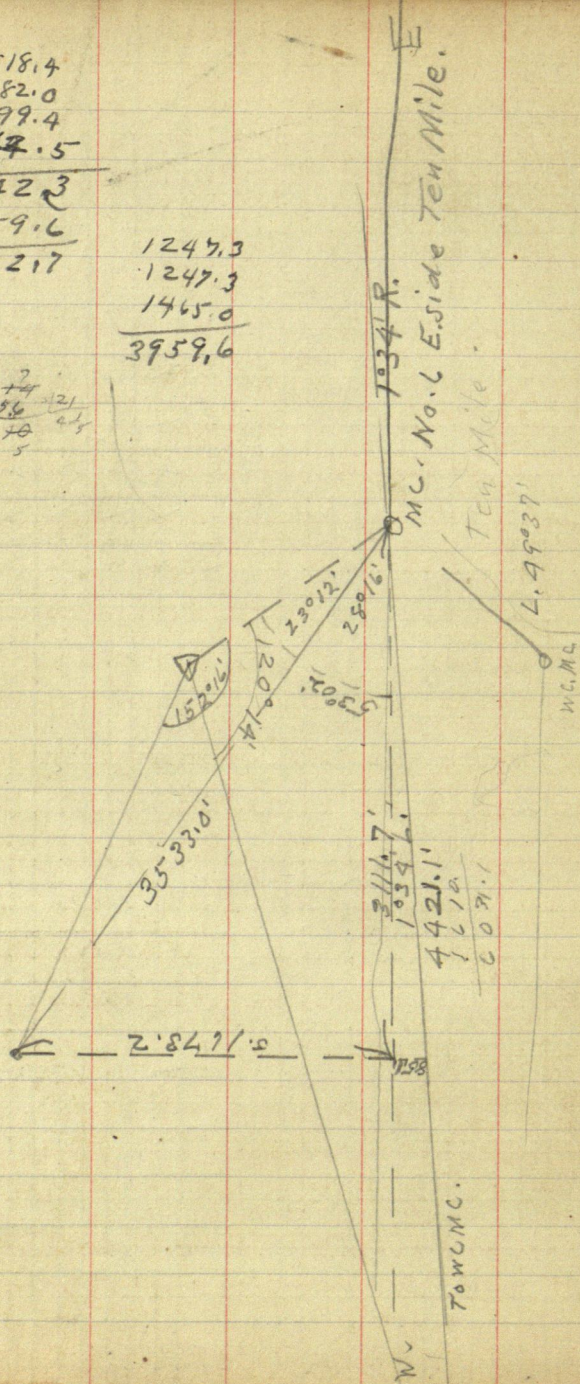
982.7

1245.3

1247.3

1465.0

3959.6

$$\begin{array}{r} 7 \\ + 4 \\ \hline 11 \\ \times 21 \\ \hline 21 \\ 110 \\ \hline 231 \end{array}$$


(to be found)

(a) Angle of sec. line at M.C. No. 6 =

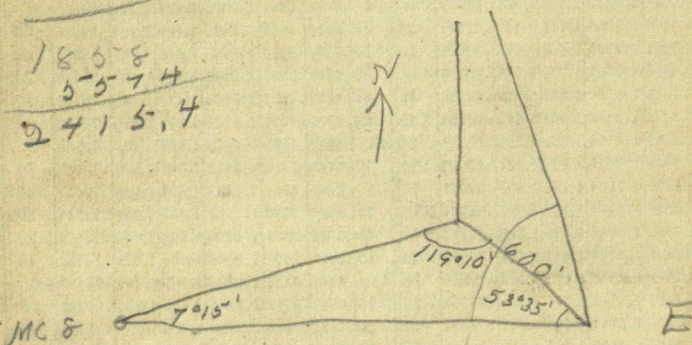
(b) Distance across Ten Mile Lake
bet. M.C. No. 6^E and No. 8^W =

(c) line W. across Lake deflects L. $2^{\circ}30'$ to No. 8.
(c) estab sec. line accurately E of
 $145. \frac{25}{36}$ & read angle to M.C. No. 7^N.

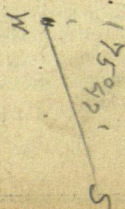
(d) find angle on portage M.C. No 15^S to
M.C. No. 18^W + 16^E

angle M.C. No. 8 to No. 7 \neq From No. 6. = $80^{\circ}45'$

185.8
557.4
2415.4



1320.0
654.7
665.3
87.0
702.3



2747.3
2732.4

15.0

333.1
309.1

23.00
220.80

590

185-8
23781

42341

37.3
12

363

315.2

7.6
10.6
9.6

18.2

122344

313.2
44690

121320
12

711740

122348

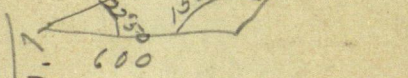
307044

1345.6

390740896

2378.1
1858
1345.6

5581.7



122348

315.2

5581.7
5324.3

257.4

2378.1
1858

4236.1

244696
61.1740

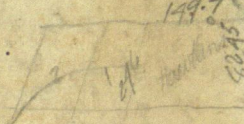
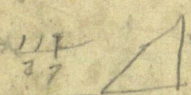
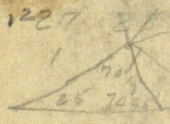
122348

7044

557.90896

P. I. More line 14 ft east

4 850.16357 179.60
 178.4
 426.1
 324.5
 26.10
 2518.5
 12471.87
 1071122.7
 119010
 5303.5
 172045
 179000
 172045
 7015
 1865
 1994.4
 3852.4
 92.2
 19944.6
 1247.3
 121810
 27.3
 422
 179.60
 109.45
 7015
 10.32
 28.4
 7003.6
 172041
 179.60
 172.41
 7919
 15224
 8002
 4562
 3492
 436
 1123517
 12000
 2953
 230
 105
 149.7
 21.7056'R
 26184
 1244
 26
 1218
 2245.7
 2619.4
 26.3
 1475.8
 2000
 1175.8
 75.5
 1100.0



DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

ROADWAY 14 FEET WIDE. SIDE SLOPES $1\frac{1}{2}$ 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.

MADE IN GERMANY.

32.05
58.33
90.38