

172 - A.

MINING
TRANSFER BOOK
1863

Please Return
to Cass County Surveyor
Walker, Minn.

Book Index

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Horst and Mackey on Rainbow Rd. to
Twps. 135 - Pges. 29-30-31-32. 1-48

Rec. 442

Tussock mounds South Rainbow road
from Page 44-69

Ben Beach on Rainbow Road. 71-90

1
Surrey of Rainbow Co. Road.
Surrey Record No. 442.
Tues. April 27, 1920

E.B. Horst and T.L. Mackey
Look up Notes, Plats and petition
for the Rainbow County road
in Trps 135N, Pges. 29-30, 31 & 32
W, Cass County, Minn.
Mackey staying at Chase Hotel.
E.B. Horst.

April 28, 1920

E.B. Horst and T.L. Mackey
in Horsts car drive to Hack
ensack and get Mose Morris
and Bert Anderson chainmen
and drive to Byron Twp. (135-32)
and make arrangements to
Board with S.A. Bjelde in Sec.
13, T. 135 N. Rgc. 32.
Horst, Mackey, Morris and
Anderson have Dinner at
Lakerview Hotel Hackensack.
Bill = \$2.40

E.B. Horst.

Recorded Book C. P. 366

April 29, 1920.

E.B. Horst Engineer T.L. Mackey
Asst. Engr.

Mose Morris and Bert Anderson
Chairmen Drive to and begin
at the I.M. to sections 15-16-21-22
T. 135-R. 32 previously established
by E.B. Horst in 1915.

From which we run S. 89° 30' W. on a
random line bet. secs. 16-21
at 536 ft. W. enter Meadow.

" 1320 " " set Hub.

" 2340 " " leave Meadow.

" 2604.2 " " an old stake set by
some Surveyor for a $\frac{1}{4}$ S. Cor.

" 2640 ft. W. set Hub and make
a thorough search for the $\frac{1}{4}$ S. Cor.
and B.T.s between Secs. 16-21 but
find no evidence of same.

Continue W. on same line

at 2950 ft. W. a wagon trail B.T.s NE-SW.

" 3960 " " Set Hub. House N. 300'.

" 4152 " " enter meadow.

" 4769 " " " Swan Creek.

" 4781 " " leave " "

at 5120 leave meadow.

" 5225.8 ft. W. the true cor.
to sections 16-17-20-21 sets S.
15.3 ft.

at this cor. we find the NW-SW-SE.
Gort B.T. stamps plainly marked and
the NE stamp burned to the ground
from which we set a 2" X 48" I.M. and
mark the following New B.Ts.

Jack pine 10" S. $21^{\circ}45'$ W. 47.7 ft.

" " 6" S. $66^{\circ}15'$ E. 98.4 "

" " 12" N. $30^{\circ}30'$ E. 58.5 "

" " 5" N. $49^{\circ}30'$ W. 57.1 "

I set transit over I.M. at true
cor. to secs 16-17-20-21 and run
S. $89^{\circ}30'$ W. on a random line between
secs. 17 and 20 T 135 N, R 90, 32 W.

at 633.5 set Hub.

" 880.0 enter swp. line

" 1100.0 leave "

" 1108.0 cent. of creek.

" 1207.0 wagon trail brs. NW-SE.

" 1214.9 set Hub.

" 1928.8 " "

qt. 2708.2 set Hub The true $\frac{1}{4}$
S. cor. bet. secs. 17 + 20 sets N.
 $0^{\circ}46' W.$ 40.7 ft.

at 2708.4 the $\frac{1}{4}$ S. sets N. 40.7 ft.
We find an old stake marked $\frac{1}{4}$ S.
and both U.S. B.T. stumps burned to
the ground from which we set an
I.M. 2" x 48" and mark New B.Ts.:
Jack Pine 8" N. $70^{\circ}15' E.$ 142.9 ft.

" " 9" S. $66^{\circ}44' E.$ 140.5 "

E. B. Horst,

April 30, 1920.

E.B. Horst engineer,
T.L. Mackey ass't eng.
Mose Morris + Bert Anderson -
Chairmen, drive to I.M. set for
 $\frac{1}{4}$ cor. bet secs. $\frac{17}{20}$ T135NR32W.
I set up transit over this cor
and run West on a random line
bet secs $\frac{17}{20}$.

At 8' center Road.

304.8' set hub. Δ

1112.4' " " Δ

1256.00' center slough.

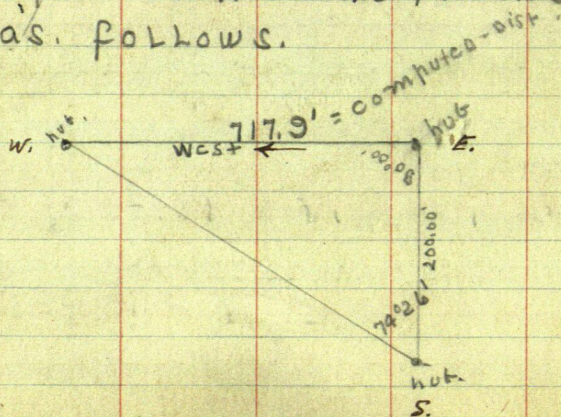
1320.00' set Hub for temp W $\frac{1}{16}$ cor.

1370.00' leave slough.

1830.1' set hub Δ

2161.1' " hub on east side of Lake.

from which we triangulate
as follows.



Get secs. 18 + 19,

16

2792.5 Leave Lake,

2879.0 set hub,

2945.1 center Road,

3470.00 set hub

3870.00 enter Slough

4076.00 Leave "

4273.60 set hub

4676.4 " "

5316.5 set hub from which an
old stake marked for $\frac{1}{4}$ cor.

Get secs. ~~18~~ bears N40°30'W
59.4'

Continue on our Random west
from hub set at 5316.5.

5820.00 cultivated field,

6035.00 Leave same,

6386.00 Road center.

6396.00 hub Δ

6728.00 enter Slough,

6880.00 Leave same,

7247.00 center Road,

7507.1 fall 76.4 South of corner
secs. 13 | 18

24 | 19 5.30 pm,

quit for day.

E. B. H.

with Mackay,

Sat. May 1, 1920, AM

E. B. Horst ENG T. L. Mackey ass't. Eng.
Mose Morris & Bert Anderson —
Chairmen.

drive to hub set at 2246.1 west
of $\frac{1}{4}$ cor. bet secs $\frac{17}{20}$, set up thence
over this point and run thence
south 513.3' to a hub thence
west 302.1 to a hub on Random
Line bet secs. 19 & 20, thence
from this hub we run south
on a Random line bet secs. 19 & 20
at 813.9 to hub

11 63.8 " "

19 60.5 " "

2627.6 FALL 40'2 West of
true $\frac{1}{4}$ cor bet secs 19 & 20.

find old Government

Bots. Set I. M. from which
New B.Ts. as follows.

Jack pine 6' S $82^{\circ}42'$ W 94.1'

" " 8' N $65^{\circ}03'$ W 135.0'

Saturday May 1st, P. M.
Carried over on page. 12

Sunday May 2 1920.

8

T.L. Mackey, Morris + Anderson
Walk over to corof secs. 17-18-19-20
and pitch camp 4 1/2 miles,

Monday May 3, 1920, 4:30 ~~am~~

T.L. Mackey + party. Start at
tern. p. point. Set at 17 45.8
North. Set up transit and cont.

" on Random line bet secs
17-18,

at 2614.1 fall 77.1 west of
1/4 cor bet. secs 17 + 18 which I
Reestablish from old gov. Bts.
described in govt. notes, as follows,

BLK. pine 5" S 34° W, 54 chs.

" " 6" S 26° E 1.09 chs.

S.W. tree bears old describe marks,
S.E. an old stump marks obliterated.

both trees agree with old Beang.
+ dist. take new Bts.

J.T. 10" S 38° 48' E 66.9 } Set I.M.

" " 14 N 27° 56' W 43.0 } 40" in ground,

Lincoln Mackey

(continued on next page.)

Monday May 3, 1920.

Proceed to establish cor.
to secs. $\frac{17}{19} \frac{17}{20}$ by double prop.
Measurements, and correct.
Points on random lines,
N-S-E-W.

W.C. on East side of Lake,
bet secs. 17-20 sets at —
537.16 - N $89^{\circ} 45'$ E of cor.

B.t.s. Jack pine $13''$ N $56^{\circ} 31'$ E 121.2 —
no others available, Set. I.M.

W.C. - West side sets. —

269.26 N $79^{\circ} 01'$ W of cor.

B.t. Jack pine $14''$ N $65^{\circ} 32'$ W 70.5.
Set. I.M.

W.C. on North side of Lake,
bet. secs. 17-18 sets. —
554.7 N $103^{\circ} 35'$ E of true sec
cor.

B.t. Jack pine $10''$ N $22^{\circ} 14'$ E 99.8.
Set. I.M.

W.C. on South side bet secs
19-20 sets. —

Monday May 3, 1920.

10

511.7 South $0^{\circ}55'E$ of Cor,
Bts. Jack 7" $S 61^{\circ}59'W$ 133.3

then I start to correct points
west bet secs. $\frac{15}{19}$.

$\frac{1}{4}$ cor, sets at 2634.7 west,
New Bts. Set. I.M.

Jack pine 10" N $44^{\circ}49'E$ 92.7
" " 14" S $25^{\circ}05'E$ 53.6 }

Take New Bts to Sec. cor on
County line $\frac{13}{24} \frac{15}{19}$, as follows.

Jack pine	16"	N $35^{\circ}01'W$	76.3
"	"	14 N $36^{\circ}52'E$	66.6
"	"	10 S $43^{\circ}42'E$	64.4
"	"	22 S $45^{\circ}27'W$	75.3

Set. I.M.

6⁰⁰ PM Quit for day,
Lincoln Maclary

(Tuesday May 4, 1920)
(over)

21

T 135N-R 32W.

Tues. May 4, 1920.

Lincoln Mackey ^{Engd} Morris - Anderson.
break camp at cor to sec.
 $\frac{17}{19} \frac{17}{20}$ + 135N-R 32W and start.

Corrections on Random
East, bet secs. $\frac{17}{20}$, thence
with Corrections on Random
bet. secs. $\frac{16}{21}$.

B + S. $\frac{1}{4}$ cor. secs. $\frac{16}{21}$

Jack Pine 16" N $1030' \frac{21}{21}$ W 77.7.

Only one tree available.

Set. I.M. (Finish)

12:30 P.M.

Spend rest of day moving
out fit from Bjelke's place
to Hansen's.

Lincoln Mackey

Sat. May 1st, 1920.

Brought forward, from page 7

12

Mose Morris + Burt Anderson
Start at Cor to sec $\frac{14}{23} / \frac{13}{24}$ + 135-32
and chain East to 4th Guide
Meridian Ranges. 32 + 31 - West,
Mackey in office writing up
notes.

Lincoln Mackey

13

Wed - May 5, 1920.

T135-R31

Lincoln Mackey Engineer
 Mose Morris - Burt Anderson
 Chairmen - Adolfe Bjilde.
 Corner man, Start at cor
 to sec 13 $\frac{18}{19}$ + WPS. 135 North

Ranges 31 + 32 West on
 4th Guide Meridian.

Set a m. I. M. for this cor.
 46" in ground, from which,
 Tack - telephone pole bears,
 $N 37^{\circ} 14' W 33.2'$

" tamrack fence post bears.
 $S 39^{\circ} 54' W 36.5'$

thence from this cor Iron
 $N 89^{\circ} 30' E$ on a random line
 bet Secs $\frac{18}{19}$ + 135 N R 31 W.
 at,

246.7 set hub.

800.00 enter swamp.

1350 Leave Swamp,

1411.9 hub.

1900.0 "

2150.0 enter swamp,

2640 hub.

May 5th brought forward, - ^{T135 R31} 14

4700.0 Leave swamp.

4971.0 Fall 18.1 South of $\frac{1}{4}$ cor
bet secs $\frac{18}{19}$. Find no trace of
old Bts.

Mr A. K. Hansen testifies that
He saw old cor. here 16 yrs ago.
I find an old oak point in
ground.

I accept this cor. on
Settlers. evidence.

I set I. M. Here. No Bts.
available.

I set transit over this
 $\frac{1}{4}$ cor and run thence N $90^{\circ} 30' E$
on a random bet. Secs. $\frac{18}{19}$ East
half.

At. 520.3 h u b.

800.0

1200.0

Swamp thence
along old Cord. Road.

15

May 5, 1920

1320 hub,

1357 center of wooden
bridge across ditch.
N + S.

2600 Leave Swamp.

2642.0 fall 2.9 South of
an Iron bar that
had been set in place
of old cor. to sec. 15/17

Set. I.M. from which 19/20.

a Poplar 6" S 59° 45' W 96'

No other trees available

Set I.M.

I set transit over this cor.
and run thence N 79° 30' E
on a Random bet sec. 5,17 along Road.
20

At 1320.0 hub,

1577.1 " from which

S.E. Cor of Pine Ridge

School bears. N 54° 04' W 77.3,

2290.3 hub,

2579.8 intersect Creek.

Corse S.W.

2599.8 Leave same,

May 5, 1920

16

2643.1 Fall 60.6 North of 1/4
Corbet secs. $\frac{17}{20}$, find old Gov.
Bts. an ELM 8" S 43° E 71.9
Oak stump N 73 1/2° E 125.1

New Bts.

Balsam 16" S 56° 20' E 81.5'

FLM 10" N 64° 15' E 172.5'

5:30 P.M. Quit for day, Set. I.M.

Lucien Mackay,

17

May 6, 1920,

Besin at $\frac{1}{4}$ cor bet secs. ¹⁷
 Set transit over same, ²⁰
 and run thence N $77^{\circ} 45' E$
 on a Random bet secs.
 $\frac{17}{20}$

at 1320.0 hub,

2300.0 " "

2642.7 fall - 3.5 North of
 Cor to secs. 16-17-20-21. an
 oak Post 6" dia, 3' long a Set
 by Otto Reese 16 yrs ago
 in place of old cor.
 Land has been cultivated.
 find no trace of old B.t.
 New B.t.

Oak 10" S $54^{\circ} E$ 55.2,

No other trees in sight.

Noon:

Set, I. M.

After dinner correct
 points on Random lines
 back to cor of secs $\frac{13}{24} | \frac{18}{19}$.

Quit for day,

Linn Macker,

Fri. May 7-1920

18

L. Mackey ENG, Mose Morris -
Burt Anderson Chairmen
Adolph Bjeldi Axman.

drive to Cor to secs. $\begin{array}{r|l} 17 & 16 \\ \hline 20 & 21 \end{array} +$

135-31 W.

I set transit over this cor
and run thence N 89° 30' E
on a Random Line bet. secs.

$\frac{16}{21}$, at,

200.0 enter swamp,

761.0 to hub.

1000.0 Leave swamp.

1241.0 hub.

1663.0 "

2000.0 "

2300.0 enter swamp.

2640.0 Make there Search for
old $\frac{1}{4}$ con but find no evidence
of same.

" Set hub on Random and
continue line.

2700.0 Leave swamp.

3047.0 hub.

new
Bt. for $\frac{1}{4}$ con.
Sec. $\frac{16}{21}$
Popul 15"
N 0° 30' E 239.0'

19 Friday May 7, 1920.

At,

3466.0

Set hub,

3720.0

Swamp.

4300.0

hub,

5000.0

Leave Swamp.

5085.0

hub,

5329.0

Fall 46.0 North of

Cor to Secs. $\frac{16}{21} \frac{15}{22}$ which I Reestablish

from ~~40~~ Old Cor. Bts. Recorded and
described as follows.

W. pine 17' S 49° E 36.9'

find stump, ^{with} Mark's.

Maple 12' S 43 1/2° W 17.4'

" Stump, decayed.

W. pine 15' N 10 1/2° W 31.6'

" "

" " 24' N 46° E 46.2'

" "

All trees agree with bearing + dist.

I set an I.M. 2" x 48" 40" in ground.

From which New Bt.

W. pine 18' N 70° 15' W 36.2'

No other trees available.

Thence I correct points on
Random heretofore described to
true line bet Secs. $\frac{16}{21}$,

At Cor to Secs. $\frac{17}{21} \frac{16}{21}$ Guitford V.

this mile very
Brushy,

Lincoln Machey
Civil Eng.

Sat. May 8, 1920.

20

L. Mackey - eng. - Mose Morris
Burt Anderson - Chaimmen -
Adolph Bjeldi axman, take
A. K. Hansens automobile and
drive to Cor of Secs. $12 \frac{1}{2}$ 14
 $20 \frac{1}{2}$ 21 , thence
from this cor walk 1 mile East
to Cor of Secs. $16 \frac{1}{2}$ 15
 21 22 .

I set transit over this cor. and
Run thence East on a Random
Line bet. Secs. 10
 12 .

at,

1000.0 enter swamp, heavy alders,
450.0 Ridge N. + S. - Leave swamp.
575.0 Swamp.
1050.0 Leave swamp.
1130.0 Center Logging Road, N. W. + S. E.
1320.0 Set hub, highland.
1780.0 Swamp.
1795.7 hub in swamp,

2651.0 fall 62.5 North of old $\frac{1}{4}$ cor.

find Gov. Bts, Tam. 0" N 75° E 11.2'
" 75° 50' W. 3.9'

Both trees bear scribble marks.
Old cor. shows scribble marks

21

Sat, May 8, 1920.

Set, I.M.

Take New B.t.s for this cor.

Tamrk 4' N 1°24'W 29.1'

" 4 S 65°35'W 11.7'

This
1/2 mile.
mostly
all swamp
and bog.

I set transit over this cor and.

Run thence S 79°30'E and Random
Line bet. Secs, 15 thru heavy tam,
and alder swamp, ²² much water.

94,

600.0 Set hub.

1320, " hub

2627.8 fall 7.0' North of
Cor to Secs, 15/14 which I Rees,
^{22/23}
from 3-Poplar stumps, all of
which agree with recorded
courses, + distances.

Set, I.M. 40' in ground.

I Gild Mound of Stone
3' high 2' west of cor.

Correct back to 1/2 cor.

Goit for, day,

Lincoln Mackay

2615.5

22

23

Sunday May 9, 1920

Mose Morris, Burt Anderson
setting I.M.s 1/2 day,

Mackey in office writing up
field notes.

Monday May 10, 1920

Rain - No work on line.

Tuesday May 11, No work
on line.

Wed. May 12 No work
on line.

Lucien Mackey

Thurs. May 13, 1920.

24

L. Mackey ENG. Mose Morris
Burt Anderson Chainmen,
Adolph Bjerde Axman. Walk
from cor to secs, $\frac{17}{20} \frac{16}{21}$ to I.M. set
at cor to secs, $\frac{15}{22} \frac{14}{23}$.

I set transit over this cor.

AN RUN thence EAST ON A RAND,
LINE bet secs, $\frac{14}{23}$ over high, open
ROLLING LAND.

At. 234.0 hub

358.0 "

1925.9 "

2640.0 Set hub for $\frac{1}{4}$ cor. Get secs.

(I.M. $\frac{14}{23}$ Make thru. search for
 $\frac{1}{4}$ cor. sets. this cor & v. find no trace
of same.
true point.

2703.9 hub.

3065.5 "

3577.5 " enter heavy Poplar & birch
timber & wind fall.

3930.4 hub

4209.3 "

4592.0 "

(CONT. over)

95

Thur (May 13, 1920)

At 5237.1 Fall 19.7 North
 of Cor to secs $\frac{14}{23} \frac{13}{24}$ which I
 Reestablish from 4 w. pine stumps.
 Recorded in Goodfield Notes as
 follows.

W. pine 20" N 36° W, 26 chs = 17.1' (old marks)

" " 16" N 17° E, 17 chs = 11.8' (old blaze)

" " 22" S 10° E, 15" = 9.9'

" " 15' S 74° W, 19" = 12.5' (")

I take new Bts, Set I.M.

Poplar 8' N 74½° W 117.1'

" 10' S 27° W 162.5'

" 6" S 52° E 72.5'

" 7" N 16° E 54'

Random to Truc Line. back to
 Cor to secs $\frac{15}{22} \frac{14}{23}$,

(.Guit for day.)

26

(+ 700 Bearing)

Frid. May 14, 1920. (379° 56' E)

LINCOLN Mackey ENG. Masos Morris,
Burt Anderson ^{Chaim} Adolph Bjeld, exc.

WALK FROM COR TO SECS. 16-17-20-21

East to I.M. Set for cor to secs. $\frac{14}{23} \frac{13}{24}$

Previous day.

I set transit over this cor, and

Run thence East on a random line

Got secs. 13. thru heavy birch and

Poplar under ²⁴ growth and second growth
timber.

A.T. 175.7 hub

370.0

Road 615. N.W. + South.

1320.0

Set. TEMP. W/16 cor. $\frac{13}{24}$

1636.0

hub

2677.4

FALL 27.4 North of

$\frac{1}{4}$ cor got secs. $\frac{13}{24}$ which I

Reestablish from two Pine stumps
Given as orig. B.T.s to said Cor, and
Recorded as follows.

W. Pine 14 S 65° E

39.6

Nor. Pine 10 N 10° E

20.1

New B.T.

Poplars' S 49½° E

43'

27

CONT.

Friday May 14, 1920.

I set transit over this $1/4$ cor
and run thence East on a Rand
Line bet. Secs. $\frac{13}{24}$ E $1/2$.
at.

2651.5 Set temp hub for cor to
Secs $\frac{13}{24}$ E $1/2$. Make thorough search
for old cor.

(Sat. May 15, 1920)

Same party walk to hub set
as temp cor on R.L. to Secs. $\frac{13}{24}$ E $1/2$
and Resume search for same.
at, 11⁰⁰ o'clock a.m. I find two
w. pine stumps.

I Try these stumps for old R.L.
and find that they check
exactly with Recorded Bear Dis.

I also find SE. & NE R.Ls.

I dig in ground at Rec. pt. and
find pieces of a squared oak.

29.

Sat. May 15 1920

I Set transit over cor
to secs. $\frac{13}{24} / \frac{15}{19}$ on Range line
30 + 31 W. and Run thence
East on a random line
Get secs. $\frac{15}{19}$ T 135 R 30 W
over Rolling land very
brushy.

at.

1320 hub.

2887.5 Set temp hub for $\frac{1}{4}$ cor.

Make thoro search for

old cor but find no
evidence of same.

5527.5 Set hub as temp
point for Corto secs.

$\frac{15}{19} / \frac{17}{20}$ T 135 R 30 W.

(Quit for day.)

Lincoln Mackay

Monday May 12 1920, 30

Mackay - Mose Morris - Burt Anderson

Adolphe Bjelke-Hire

A.K. Hansen's Car & drive

to Sec 21- T435- R30 &

Make arrangements to Board
with Mr. PENNINGTON'S PLACE,

Have dinner at F.A-

Barnards.

BILL - \$2.50 (Paid)

BILL for Car 10.00

Lincoln Mackay

Stake. Showing old axe marks
and faint scribe marks.

I accept this point for true
cor.

I Computed dist. & bearing to
same from temp. pt. Set at.
2651.5.

True dist from $\frac{1}{4}$ cor. to this cor.
= 2688.1 Fall 54.1 North of 80 m.

Take New Bts.

Poplar 7' N $102^{\circ} 24'$ W	29.5'
Oak 12' S $53^{\circ} 1'$ E	135.5'
Poplar 6' N $59^{\circ} 56'$ W	53.1'

This completes T135 R31 W,

31 Tuesday May 18, 1920;

L. Mackey ENG. - Mose Morris
Burt Anderson - Chainmen
Adolph Bjelde Axeman.

Walk to TEMP hub set at
at 5527.5 East and search
for Cor to Secs. ¹⁸/₁₉ 17.

I find three of the old trees,
an

Oak N 50° W .17045.

" S 50° E .45"

Maple N 70° W .30 "

I Reestablish.

Cor from these

trees and set I.M 2" x 4"

40" IN GROUND, take new B.Ts,

Poplar 8" S 33° 30' W

86.7'

" 6" N 32° E

81.5

thence I correct points on
Random Line back to Cor to
Secs. ¹³/₂₄ 17.

Proportion in $\frac{1}{4}$ cor bet Secs ¹⁵/₁₉.

Set I.M.

$\frac{1}{4}$ cor sets at 2913.6 East.

Set, I.M. at cor. to Secs.

$\frac{13}{24}/18$ & $\frac{1}{4}$ Cor. Sec. $\frac{13}{24}$ Same day

About 3³⁰ o'clock, Starts to Rain,

Quit for day.

Lincoln Mackey
Engineer, J

Wed. MAY 19-1920.

LINCOLN MACKAY ENG. & PARTY.
 Go to I.M. Set at Cor to 8005.
 17-18-19-20 - T135-R30. I set
 TRANSIT OVER this Cor. AND
 RUN N 79° 30' E ON A RANDOM LINE
 60 + 8005, $\frac{17}{20}$, 94,
 291.5 to hub,
 655.5 " " "
 905.2 " " "
 1103.9 " " "
 1301.7 " " "
 1320.0 set hub for temp W 1/4 cor.
 1719.7 " " "
 2269.0 Creek Runs South.
 2664.1 fall 71.9 South of original
 1/4 cor. which is a stone 24"
 LONG set in place of true cor.
 16 yds 960 By, Surveyor Hallet.
 I accept this cor. and set
 I.M. 2" x 48" - 46" IN GROUND.
 Thence I correct all points
 ON RANDOM over to true LINE
 Road center.
 W 1/4 cor sets at 1332.0 East,

Wed. May 19-1920.

I set transit over $R \frac{1}{2}$ cor bet.
Secs. $\frac{17}{20}$ & R on thence $N 89^{\circ} 30' E$
on a Random Line bet Secs. $\frac{17}{20}$.
at.

901.0 to 406.

1605.0 " "

2645.2 Fall 6.2 South of a Set

Stone in center of Road.
Set by Hallet-Surveyor for
Certa Secs. $\frac{17}{20}$ & $\frac{16}{21}$. I set transit
over this cor and find old N.E.
B.T. STUMP agrees with Recorded
Bearing & Dist.

I accept this cor.

from which U.S. Geological Sur.
B.M. 3" Dia. Boats, S $49^{\circ} 45' W$ 37.5'
Po Plat 9" $359^{\circ} E$ 43.7'

Lincoln Macher

35 (AFTERNOON)

(May 19-1920.)

~~I set + transit over cor to
secs $\frac{17}{16}$ and run thence
 $\frac{20}{21}$
North on a random bet secs $\frac{17}{16}$
at.~~

~~2648.7 INTERsect I.M.
set By B. Bartlett Surv. in
1904 for $\frac{1}{4}$ cor bet secs $\frac{17}{16}$.~~

~~Set No hubs on this $\frac{1}{2}$ mile.~~

Page 373 Rec. Book C. No. 442.
(Easton & sec. 16).

I set transit over this I.M.
 $\frac{1}{4}$ cor. and run thence East
on a random line thru center
sec. 16 - T 135 - R 30.

at.

201.1	— — — —	hub.
734.0		"
996.3		"
1597.0		"
1915.5		"
2060.0		"
2472.5		"

(May 19-1920) 36

3400.0 ENTER SWAMP,

3800.0 BROOK - South,

4058.3 Set - hub.

4264.3 " "

4604.7 " "

4752.0 " "

5223.1 Intersect $\frac{1}{2}$ State Road,

Set TEMP Point for $\frac{1}{4}$ cor.
Sec. 6/15 - Look for old cor.
but find no trace of same.

(Quit for day.)

375-BOOK C.

37 (May 20, 1920)

LIN. MACKAY ENG. - MOSC -
MORRIS - BURT ANDERSON - CHIN.
ADOLPHE BYELDE AXE.
WALK TO COR. OF SECS. $\frac{16}{21} \times \frac{15}{22}$

WHICH IS AN OAK STAKE SET
IN CENTER OF ROAD ABOUT 1'
BELOW SURFACE.

THIS COR WAS ESTABLISHED
BY STATE ENGINEERS.

I SET TRANSIT OVER THIS
COR AND RUN THENCE NORTH
ON A RAND. LINE GET SECS.
16/15, ALONG CENTER OF STATE
ROAD.

AT.

2640.0 I SET TEMP 1/4 COR
GET SECS. 16/15.

5293.1 FALL 5.6' EAST OF
COR TO SECS. $\frac{9}{16} \times \frac{10}{15}$ - WHICH
I REESTABLISH FROM THREE
OLD GOV. B.T. STAMPS.
RECORDED IN FIELD BOOK
AS FOLLOWS. —

(May 20-1920) 38

131 Rch 7"	S 55° E	47.1'
98 Rch 10'	N 55° W	44.2
" 5'	N 27° E	62.7

I then go back to TEMP
1/4 cor and set same at the
Proportionate dist. 2696.5'
North.

I thence set TRANSIT over R.
TEMP Pt. set at Intersection
of Center Line Sec. 16 & St. Rd.
from this point the 1/4 cor.
sets due south 162.9

I then walk 1 mile west
to 1/4 cor set secs. 17/16. I
set TRANSIT over same & run
S 78° 13' E ON the Line-Center,
Sec 16. I correct all points
ON RANDOM to the Line.
Blaze this three at

39 May 20-1920

5224.5 Fall 2.4 South of tree
1/4 cor. (Quit for day)

Lincoln Mackey,

Friday, May 26, 1920,

40

Same Crew:-

I start at $\frac{1}{4}$ cor. bet secs. 16¹⁵ and Run thence East on a Random Line - thro center of Sec 15. at.

400.0' Enter Cedar-alder Swamp,
700.0 Cross off take ditch bars,
N. W. & S. E.

415.0 Creek - course Southerly.

1047.9 - to hub,

1200.0 - Leave Swamp, thence over,
high Rolling land,
1751.3 Set hub,

2300.0 " "

2640 - Barb wire fence N. & S.,

2643.5 Set hub,

3160.0 " "

3347.0 " "

3660.0 " "

4177.5 " "

5267.5 Fall 67.5 South of $\frac{1}{4}$ cor.
bet Secs. 15/14. which I Recs.
from two Gov. Rts.

Take New Rts.

E 111° 10' S 56 $\frac{1}{2}$ W 69° 0'.

Set, I, M. 2" x 48"

FRID, May 26 1920,
AFTERNOON

I set transit over Jaco,
607 sec. 15/14 & on thence
STRAIGHT ON RANDOM LINE thru
center sec. 14.

97,

Sta. 386.0 to hub.

846.8 " "

1150.6 " "

2743.2 " "

3667.7 " "

3990.7 " "

4755.0 " "

at 5270 - I set temp pt. for Jaco,
sec. 14/13, I make a thoro
search for old Gov. cor. &
B. ts, but find no evidence
of same.

(at 5260,)

Quit for day,

(Lincoln Mackey)

Sat, May 22, 1920

42

Same Crew.

Begin at I, M Set at Cor. to sec.

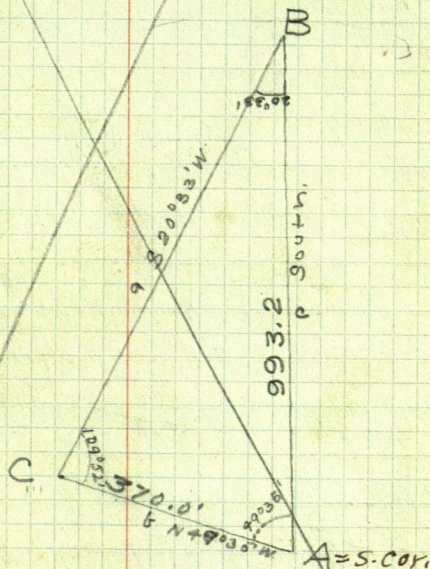
$\frac{11}{14} \frac{12}{13}$ in meadow, by E. B. Horst.
in 1917.

I set transit over this cor. &
Run thence South on random
line bet secs. 13 & 14.

I then locate to point set on
line South from Sec. cor. as follows.

$$c = \frac{b \sin C}{\sin B}$$

$$c = 993.2$$



a + 993.2 to hub in old grade.

" 2640.0 Set temp. point for 1/4 cor.
bet secs. 14/13 - Make another.

213

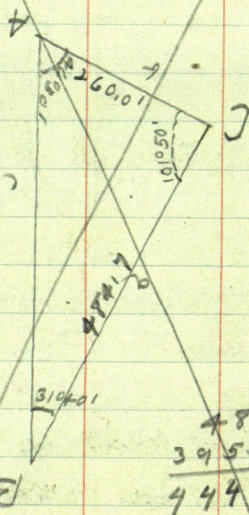
Sat, May 22, 1920

Search for 1/4 cor.
I don't. Line South.

At 3955.6 to hub on North
Side of Slough, from which
I Δ as follows

$$c = \frac{b \sin C}{\sin B'}$$

$$c = 484.7'$$



$$\begin{array}{r} 484.7 \\ 3955.6 \\ \hline 4440.3 \end{array}$$

at 4440.3 to hub on South Shore
of Slough.

at 5270 - Set Point,
(Quit for day.)

July 30

44

Tusler and Morris in walkey.
getting necessary notes and tools to
complete the survey of Rainbow
county road.

Aug. 2

Tusler Morris Smith.

Take the 9:17 train from Hackensack
to Pequab.

and hire Futz auto to drive us
out to Port View summer resort.
the only place we can find
board & Tusler reads over notes
to get familiar with the work.
while Morris and Smith get the
I. M. left last spring, at 4 P.M.
we go and find a I. M. set
near Port View school house
and look for 1 axman and hire
one.

at Port View to stay
through this survey job.
E. J. Tusler

Aug 3 - 1920

Tussock. Morris Smith - ~~19~~
 C. Stanghell. take outfit
 and go to $\frac{1}{4}$ Sec cor.
 between sec 17-18 Twp
 135 - R. 29. and look for
 I. M. set by Harst in a
 Previous Survey.

at I. M. between sec 17-18 we
 set following B +

Pop. 6 N 35° 49' E 46.4

Pop 6 S 41° E 47

we back right on center of
 graded road and cut random
 line west as follows.

at 288.0 hub.

" 1183.0 hub.

" 2420 line run in meadow

" 2470 leave same

" 2985 hub.

" 3365.6 hub.

" 4800 hub.

" 5038.7 hub. set 17 ft. S

of old stake Badly buried.

Note the true distance of
 this line 5064.5

(Possibly only 5032.6 (E.B.H.))

at sec ^{can} 7-18-12-13

run random line south to 8945"

1136.4 hub

1606.6 hub

2220. center of old road N-W-S-E.

2300 hub.

2680.7 - P.I. on E-W - random
line through cent of sec 18.

set 32.5 E of 5038.7 hub.
on random line.

quit for night
E. L. Lush.

at station 2647.1 south on
random line sec 13-18

$\frac{1}{4}$ post set West 26.4

on random ~~between~~ through cent
sec 18. set N 33.6

5038.1

26.4

3-064.5-

Aug 4th 1920

Hart comes down with car and
get the County transit and looks
over notes and work. Leaves H. B.
transit and goes back to Walker.
Truck men Smith and Shangkell
continue south on random line
as follows.

set transit over P.T. and continue
line south

at 36 00 hrb.

45 00 hrb.

52 80 trip sec cor

fail to find old government B.T.
hire Shangkell with auto to
take crew to sec cor.

sec $\frac{19130}{2425}$ where we find ball
drum in the ground far cor.
set from which we take

following B.T. Jack P 18 -

$32^{\circ} 55' E$ 115.5' this is old
B.T. set by some surveyor - F.A. Dwyer

in a survey 4 years ago.

according to others.

Jack in oak post

(Cor of fence).

S $31^{\circ}30''$ W — 35.9

set. I. M. for true sec can.
and run north $8^{\circ}45''$ ✓ Reroundest
as follows.

154.8 hbl.

762.8 hbl.

1240 meadow.

2200 leave same.

3000 hbl.

3233.3 hbl.

3600 meadow

3950 leave same.

3970 wire fence.

4047.3 hbl.

quit for night. p. 376 - C.

E. L. Lush.

49

aug 6

Iron hub 5064.5 we continue
random line west as follow.

set I. M for $\frac{1}{4}$ sec cor
between sec 12-13

Basswood 7 S 39° W 134.5
west on random.

1400 hub.

1935.9 hub.

2050 kump.

2600 leave kump

3000 hub.

37247 hub.

4400 hub.

52238 P.T.

5260.3 set I M for $\frac{1}{4}$

sec cor sec 13-14

N & W B.T. Oak 10 N $26^{\circ}35'$ E

84

Maple 8 N $51^{\circ}30'$ W 80 ft.

random falls south 68.4

random line run by Mackay falls

N 21 ft total distance Mackay line
is 5293.2

E. L. Luster.

RAINBOW ROAD

FOR

SHEET

TIME

30

July

Aug

1

0

0

0

E. L. TUSLE

R.

M. MORRIS

1

P. R. SMITH

0

C. SHENHOLLS

1

Eva Smith

1

Aug.

1

E. L. TUSLE

1

M. MORRIS

1

P. R. SMITH

1

E. B. HOLST

1

Eva Smith

1

BOARDS AT PORT-VIEW.

2

BOARDS

3

SHEET

7

8

Aug.

1

E. L. TUSLE

1

M. MORRIS

1

P. R. SMITH

1

E. B. HOLST

1

Eva Smith

1

51

aug. 7, - 1920

Twt 135 - 30

E. J. Insler more morais Perry
Smith End Smith C. Stanghell
with his car drive to sec
 $\frac{15}{21} \frac{16}{52}$ and drive I. M. where
S. Mackey in his previous survey
set hub. we also set I. M.
between sec 15-16 where we find
hub set by Mackey.
we drive to sec. 13-14-23-24

Twt 135 - R 32

we find road crew here to
work on road they had
dug dirt from hill and found
I. M. that was reported gone.
so we take following B 7

Oak 10 N $60^{\circ} 05' W$ 54.9
Sence R. S $45^{\circ} 30' E$ 46.5

we now read over S. Mackey's
notes for dope on $\frac{1}{4}$ sec cor.
but he failed to record same
so we leave it. At Leader store.
and wait for hiring.
E. J. Insler, S

Township road.

aug 6 - 56

135 - 2.9

Tusler. marks Shanghai.

Set I.M. at sec 18-19-13-24

no B.T. available so

we start line east.

This con. sets w. 53.2 of N-S
random between sec 18-13

N-E ANGLE $\approx 88^{\circ}20'$

Total distance of N-S random = 5294.2

we run line east $7^{\circ}30'$ as follows.

977.5' hulk

2427.4 hulk.

4100 hulk.

4600 hulk.

quit for dinner

P.M. Greg Smith

comes to help on survey -

Full crew

we find distance of this line
to be 4998 ft.

we fall north of I.M. by part
view school house 38.5'

correction on this is .0077

4 P. set at 2393.5 E.

C
p. 377

57

we go to sec cor sec $\frac{12}{7} \frac{13}{18}$
 and turn S.E., $88^{\circ} 30''$ from
 sec line and run east as
 follows.

2200 hbl.

2700 hbl.

4556.3 hbl.

5065.5 to hbl at ^(U.S.G. survey) _{B.M.} far

geog' = cor set north.

Aug 6th

Lusher Morris Perry Smith Eva
 Smith C. Shangkella.

start at I. M. 18-19-17-20

we chain north up road.

to get chainage for the

Purpose of setting cor sec 18-

17-7-8 we find this line to

be 5283.3 from I M to

geological cor set by us

surveyors to be called:

and record same.

we set I M .8 North.

Survey Record No. 442.

111

Survey Record No. 444.
135-29

Sat. May 22, 1920

E.B. Horst and Robt Aylsworth
leave Walker in Horst's Ford car
and drive to G.W. Pennington's
place in sec. 21-135-30 and get
T.L. Mackey and crew of 3 men
we have supper with Pennington
and drive to Chas. Anderson's
(Rocky Point Resort) in sec. 32-135-
-29 to begin survey of the
Interlachen County Road.

E.B. Horst.

Sunday, May 23, 1920.

Mackey works on Notes of Rainbow
Road and assists Horst in making
plat and computing data for the
Interlachen Road from Notes of
previous surveys in same locality.

E.B. Horst.

380 C

At Interlachen Road.
135-29.

62

Monday May 24, 1920

T.L. Mackey asst. engr. }
Mase Morris chain } 2nd crew.
Adolph Bjelde " }

E.B. Horst. Eng. in charge. }
Burdick Anderson chain } 1st crew.
Robt Aylsworth axe. }

Mackey and crew begin at the W.M.
at the cor. to sections 29-30-31-32
set by E.B. Horst in aug. 1916 from the
4 U.S. B.Ts. and sighting East on
the true N. Boundary of sec. 32
turn S.E. angle $89^{\circ}40'$ and run
S. on random sec. line bet 31-32
at 1200 ft. S. leave tam swp.

" 1770.2 Hub.

" 1942.1 "

" 2334.2 "

" 2640.0 "

" 2685.0 to the Road NE. & SW.

" 2700.0 telephone line.

" 2814.0 Hub.

" 3220.6 "

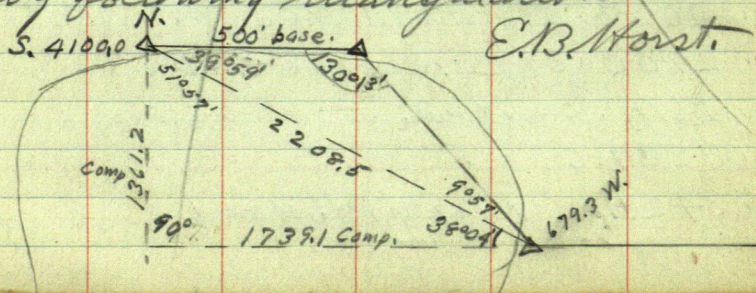
" 3420.0 Rocky Pt. Road

- at 3931.0 Meadow
 " 4095.0 leave same
 " 4100.0 Hub on seawall.
 " 4100.0 Agate lake.

Lincoln Mackey,

Horst and crew begin at the
 1/4 S. cor. ^{1st} on Twp. line on S. side
 of sec. 32-135-29 established
 in aug. 1916 by E.B. Horst from
 the U.S. pine B.T. and run W.
 ($8^{\circ}45'$ Var.) at 679.3 ft. W. set Hub
 on W. bank of Agate lake.

angle from this Hub to Mackey's
 Hub on N. side of Agate lake
 $= 38^{\circ}04'$. Angle from Mackey's
 Hub on N. side of lake to Horst's
 Hub on E. side of lake $= 51^{\circ}57'$
 distance between Hubs $= 2208.5$ ft
 by following triangulation

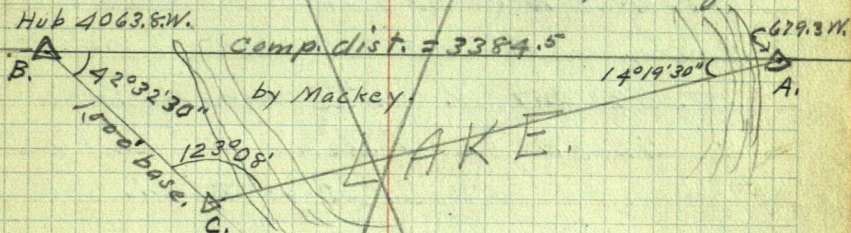


Tues. May 25, 1920.

Horst and crew produce Random Twp line W. across Agate lake and continue W. to Twp. cor. of Twp.

134-29430 and 135-29-30

Triangulate ^{agate} lake as follows: From Hub on East side of Agate lake set Hub on W. side 350 ft W. of lake



at 3713.0 ft. W. leave Agate lake

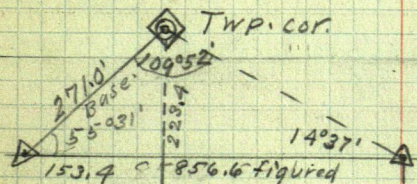
" 4063.8 " " Triangle Hub. B. ^{SE COR} School House

" 4504.2 " " Hub.

" 6208.5 " " leave field

" 6357.1 " "

" 6613.7 " " Triangle Hub. A. E. side lake



Rand. Twp. line

at 7470.3 the Twp. Cor. sets N. 223.4 ft.

Correction N. per ft. W. = .0299

Proportion of our chain to U.S. chain = .9799685 ft.

(over)

Both crews run W. on true Twp.
Line from W. Shore of Agate Lake
at Hub 4063.8 on random offset
N. 121.5 feet to true line

at Hub 4504.2 offset N. 134.1 ft.
produce true Twp line W. thru
these points and set $\frac{1}{4}$ S. Cor. at
5174.23 W. (Wood post)

Continue W. to

at. 5324.0 W. enter meadow

" 5738.0 " leave " ent. field.

C.B. Horst.

J.L. Mackey,

Wed. May 26, 1920.

A.M. Rain.

Forest and Mackey on Notes and Computations.

P.M. Both crews on Twp. line at 6057.0 ft. W. leave field.

" 6467.83 " " set Iron Mon. at true point for W. $\frac{1}{16}$ Cor. Secs. 31-6 with following bearings!

Poplar 7 S. $89^{\circ}33'$ W. 153.8 ft.

R. Oak 6 N. $22^{\circ}00'$ W. 37.0

point for W. $\frac{1}{16}$ Cor falls in centre of a new graded road running S. from this point which bears S. $21^{\circ}15'$ W.

We return E. to 4063.8 W. connected produce true line E. to Sta. 3719.9 and set a 2" X 48" Iron Mon. for Wit. Cor. to sec. cor. which is 132.2 ft E. in Agate Lake

at 4063.8 S.E. Cor. of school house bears N. 15.3 ft.

From Hub 4063.8 We turn Left, $40^{\circ}31'$ and run centre line of Co. road along W. shore of Agate Lake.

at 438.5 Left 19°01'
 " 1284.0 Right 40°18'
 " 501.2 to true section line
 between sections 31 and 32-135-29.

EB Horst,
 L. Machey

Rec. 444

Thurs. May 27, 1920

Both crews continue centre line of County Road.

at station 4140.5 S. on sec line bet sections 31 and 32 Set an Iron Mon. on seawall N. side of Agate lake with following bearing trees:

{ J.P. 12 N.E. 5.2 ft

{ Pop 9 N.W. 4.1 "

Return N. to sta. 3844.9 on sec. line backsight on E of road

thence Left. $70^{\circ}27'$ on sec. line 1140.3 ft.

to $\frac{1}{4}$ S. Cor. between sections 31-32

Where we set 2x48 I.M. with following bearing trees:

N. Pine 8' N. $39^{\circ}30'$ E. 39.6 ft,

N. Pine 16' S. $79^{\circ}47'$ W. 54.2 ft,

Thence Right $88^{\circ}28'$ and run E, on

E & W. $\frac{1}{4}$ line 1311.1 ft. and set an

I.M. at true pt. for C.W. $\frac{1}{16}$ S. Cor.

sec. 32. B.T.s = { B. Oak 12 S. $27^{\circ}35'$ W. 66.2'

{ Popple 6 S. $24^{\circ}00'$ E. 46.0'

Survey Record No. 444.

thence Left $88^{\circ}04'$ and run N.
on true $N. \frac{1}{4}$ line.

at 688.0 N. set Hub.

" 1103.0 " " "

" 1500.0 " " "

" 1800.0 " " "

" 2295.2 " " "

" 2536.0 " east. swp.

" 2702.6 " intersect 4.1 ft. W.

of point for $N. \frac{1}{4}$ S. cor. bet.

secs 29-32 where we set a 2"
 $\times 48"$ I.M. in swamp.

thence cut line East on true
sec line to intersect the
W. H. Coppars road.

complete survey at 4 P.M. and
return to Andersons for supper.

E. B. Horst.
J. L. Micker,

71 Rainbow Road 135-30

Wed. July 12, 1922

EB Horst + BM Beach
look up notes pertaining to
survey of a part of the
county road known as the
rainbow road. We are to
establish the road center
from the cor. of sec. 16-18-
20-21-135-30 to the cor.
of sec. 17-18-19-20-135-29.

1957-30

72

Thursday July 13, 1922

I take the 8:45 train for
 Pillager via Brainerd. Arrive
 Pillager 11:20 AM. Fare \$2.77.

Commissioner Jones gets
 9 men for me & takes us out
 to Geo. Pennington's where we
 are to board during this survey.
 We then go to the cor. of sec.
 16-17-20-21 -195-30. which is
 a 2" iron monument in the
 center of a N. & S. Township rd.
 I set transit over I.M.
 backsight on center of Twp.
 road running W. from this
 corner and run E. Needle
 reads N. $91^{\circ} 15'$ E. New brgs.
 to this cor. are:

U.S.B.M. S. $51^{\circ} 6'$ W. 36.8'

Pole 6" S 35° E 44.0'

at 375 enter marsh

" 450.4 hub lve marsh
 quit for night

Ben Beach

73

Friday, July 14, 1922

Ben Beach, Transit + chain
 Bruce Cameron, chain + Flag
 Gilbert Sorg, axe
 Parley Sorg

We continue E between
 sec. 16-21-135-30

at 1169.3' hub
 " 1320.0' set temp stake
 " 1613.1' hub.
 " 1958.0' "
 " 2100 enter marsh
 " 2350 live "
 " 2494.6' hub.
 " 2640.0' set temp. stake
 " 3000.0' hub.
 " 3420.1' hub.
 " 3790.4' "
 " 3960.0' set temp stake
 " 4119.0' creek 8" wide.
 " 4323.7' hub live marsh.
 " 4757.0' hub.
 " 5288.0' @ S.P.H. and

fall 152.3' N. of I.M. sec. cor.
 to sec. 15-16-21-22. S.W.
 $\angle = 89^{\circ} 30'$ from rand. line

75

1935-30

We straighten this IM.
which was probably bent by
a road grader and quit
for night. After supper
I figure corrections.

Ben Bach.

Hub at 455.4	goes S. 21.8 ft.
" " 1164.3	" " 33.5 "
W. $\frac{1}{16}$ S. 1320	" S 38.1 + E 2.0'
Hub at 1613.1	" " 46.5 ft.
" " 1958	" " 56.4 "
" " 2494.6	" " 71.8 "
$\frac{1}{4}$ S cor. 2640	" " 76.0 + E 4.0'
Hub at 3000	" " 86.4 ft.
" " 3420	" " 98.5 "
" " 3720.4	" " 109.2'
E $\frac{1}{16}$ cor. 3960	" " 113.9 + E 6.0'
Hub at 4119	" " 118.6 ft.
" " 4323.7	" " 124.5 "
" " 4457	" " 137.0 "
5288	" " 152.3 to

I.M. sec. cor. of sec. 10-16-21-22

Saturday, July 15, 1922
 B.M. Beach. Transit + chain
 Bruce Cameron Chain + Flag
 Albert Sorg
 Parley Sorg

We correct s. from all
 hubs and set road centers
 We set a 2'x48" I.M. at
 2644.0' E. for the $\frac{1}{4}$ sec. cor.
 between Secs. 16 and 21

We do not set the $\frac{1}{16}$ s. cors.

We begin at the I.M. cor.
 to sec. 15-16-21-22, back sight
 on corrected hub at 475.7
 ft E. and run E. between
 sec. 15-22. Needle reads
 $89^{\circ}30'$

At 316.2' hub 10' N. of fence

" 1100.5 "

" 1962.0, hub

" 2644.6 "

We are unable to find the
 Gov't B.T.s to the $\frac{1}{4}$ sec. cor.

Ben Beach.

Monday, July 17

Ben Beach, Transit

Bruce Cameron's Chain

Parley Sorg

Henry Mann & Axe

Harold Jensen

We cont. E from hub 2644.6

At 2957.8' hub

" 3637.1 "

" 4019.7 "

" 4259.0 "

" 5000.0 "

" 5281.0' intersect E

of N. + S. Twp road which

was surveyed by Hallet. We

make a thoro search for the

cor but fail to find anything

we can use. quit for dinner.

At 5284.3' hub

" 6000.0' "

" 7089.1 "

" 7514.3' "

At 5:00 P.M. it starts to
rain so we quit for night.

Ben Beach.

79

110

11205.5'

Tuesday, July 18, 1922

Same crew. cont E from
hub 7514.5 on random line
between sec 14-23.

At 7920 set temp stake

" 8055 hub

" 8062 cross fence

I make a thoro search
for the $\frac{1}{4}$ s corner bet. sec.
14-23 where Gov't notes call
for two small aspens but
am unable to find anything
Old settlers around here say
that Hallett surveyed this
line but I have seen no
Trace of any survey and
he failed to set any
corners We continue E.

At 8637.4' set hub.

" 9647.0' " "

" 10100.0' " "

" 10560.0 set stake for
temp. cor of sec. 13-14-23-
24. We search for U.S. B.T.s
but are unable to find any
thing. Continue East.

Tues. Cont

At 11000.0' Set hub

" 11205.5' " "

It is pretty heavy brushing
quit for night

Ben Beach.

5005.5'

Wednesday, July 19

B.M. Beach, Transit
Bruce Cameron } Chain
Tarley Sorg }Henry Mann } Axe
Harold Jensen }We begin at hub 11203.5'
and cont. E. between sections
13-24 on a road sec line

At 12156.7' set hub.

" 13245.1 " "

" 13587.4 " "

" 14562.4 " "

" 14872.0 " "

" 15842.5 " "

" 15865.2 fall 149.0' S.
of 1M. sec. cor. to sec. 13-
24-18-19.Begin at this 1M. and
rechain Tusler's old line
E. between sec 18+9-135-19
at 977.5' hub. We set
Stake for road center
7.5' S. At 2397 1M. $\frac{1}{4}$ S.
cor. Our chainage for this
mile is 5005.5' We

find Tusler's old survey line and also most of his corrected road center-stakes. We take our outfit back to corner of sec 13-14-23-24-185-30 where we intend to run N. $\frac{1}{2}$ mi. and S. one mile.

The Govt chainage for the three miles from the cor. of sec. 15-16-21-22 to the cor. of sec. 13-24-18-19 on the range line is 15826.8 feet. Our chainage is 15865.2.

Thursday, July 20

Bruce Cameron and Parley
Sorg Chain N. from the
cor. of sec. 22-23-26-24 to
the $\frac{1}{4}$ cor. between 14-15.
At 5102.7. Intersect land.
sec. line bet. sec. 14-15-
22-23. At 7895.6 I.M.
 $\frac{1}{4}$ sec. cor. bet. sec. 14-15.
This is a twp. road. We
did not run this line.

From Helpicks
place I put in a call to
Walker but could not
make connections so
I call a car from Peguot
and take the 3:25 train
for Walker. Fare
Peguot to Walker \$1.43

14 S.

2631.9

19

5299.4
2649.7

23

263.8

26

16

10

5286.1
2643.

22

21

27

13

5279.5
2639.7

24

Monday, July 24.

I get necessary notes on the N.E. & N.W. corners of sec. 26-135-30 and get my tape fixed. I take the 8:40 A.M. train for Pillager via Brainerd but, as the train is nearly two hours late, I fail to make connections and have to lay over in Brainerd until 12:03 A.M.

Tuesday, July 25, 1922

I arrive in Pillager at 1:30 A.M. I put in the rest of the night trying to keep awake. When the town wakes up I look for a crew and a car to take us out to Penningtons where we arrive about noon. We take ten cement monuments with us which we distribute along the line.

Tuesday, July 25

B.M. Degeh, Transit

Bruce Cameron, Chasin

Floyd Loht

Frank Seadlund

} are

We begin at the N.E. cor.
of sec. 26-135-30 and run
N. on $8^{\circ}15'$ Var. bet. sec. 23
and 24

At 1265.0' hub.

We cut about 1200 feet
farther and quit for night-

Ben Beach

Wednesday, July 26

We continue N. bet.
sec. 23 and 24.

At 2376.5 hub

" 2624.8 I mark a
6 inch poplar tree for
temporary $\frac{1}{4}$ S. corner

At 2865.5 hub.

" 3677.8' "

" 5156.1' intersect
E. & W. random line at
feet E. and
set hub.

At 5770.9 hub

" 6000 ent. SW 1/4

" 6385.0' W. " hub.

" 6958.0 hub

We cut about 600 feet
farther and quit for night.

Ben Beach.

Thursday, July 27, 1922

Same crew. We continue
N. between sec. 13-14

At 7255.0' hub.

At 7668.8' "

" 7978.9 I.M. $\frac{1}{4}$ S cor.

bet sec. 13-14 sets West
167.2' We then go to the

$\frac{1}{4}$ S. cor. between 14-15 and
Chain S on a twp. road
at 2789.7 intersect E. & W.
random line.

At 7909.0' I.M. cor. to sec.
22-23-26-27.

We then begin a the I.M. in
the center of State Road and
correct hubs and set road
center stakes. We set a
cement monument 76.6 ft.
N. of sta. 2642.5 E for the
 $\frac{1}{4}$ S. cor bet. sec. 15 & 22
and also one 153.0' N. of
sta. 5285.0' E. for the cor to
sec. 14-15-22-23 from which
we set witness corners as
follows:

Thursday, July 27, Cont.
Cement Mon. N. 45° E 46.7'

" " N. 45° W 46.7'

quit for night

Ben Beach

Friday, July 28, 1922.

We continue E from cor
of sec. 14-15-22-23.

At a point 155.8 feet N. of
station 7934.1' we set a
cement monument for the
 $\frac{1}{4}$ S. cor. bet. sec. 14-23

At a point 163.1 feet N. of
sta. 10583.2 we set a cement
mon. for the cor. to sec. 13-14-
23-24 from which we set
witness corners as follows:

Cem. Mon. N. 45° E 46.7'

" " N. 45° W. 46.7'

At a pt. 154.3' N. of sta.
13222.4' E we set a cement
monument for the $\frac{1}{4}$ S cor bet.
sec. 13-24.

This finishes the required
piece of road. I get a car

Friday, July 28, Cont'd.
from Day and Johnson's garage
in Peguot and take the outfit
to Peguot from where I get
a train to Walker. P.R. fare,
Peguot to Walker. \$1.43

Ben Beach.

26978.7
2659.6

5280
2640
7920

10560
26407
13206
2640

5280

NW 11.2

15840

SW 21.7

1301.7

10560

NE 10.8

30.2

5280

SE 18.00

134270

15840

(Set out 39780)

E 1/16 Moves 4.6 North, 3.9 East

1/4001, 3.5 North 2.6 E

5283.3 645

5280

3323

3

1995

15840

23275

11000

1.06613

4840

39

5294.12

959517

02093

19939

2920.9

4152907

16

4

45.1/2

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.