

239

DIETZGEN
TRADE MARK

ENGINEERS
FIELD BOOK
No. 403

State Highway

This book belongs to
John W. Curo-Jenkins
Minn. If lost, finder
please notify us and
we will pay you.

And listen-please
rush as we may need
the book and it will
save us time and money
we will spend looking
for the book.

Thank you.

John W Curo
August 1-
1938

Any Township

6	5	4	3 ⁰	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Index

Mahlam Estate -- Not surveyed
Started but stopped - Naler
Copied in small book and
rubbed out of this book
Not important
Pg 2709.

State Highway 134-29
140-141-25-26 Remer

Letters Pg 2

Gas	36
Miles	36
Time	19-67

2

April 8-1941

Letter From Slit Highway
comes to my address.

Bob Dahms get the letter
by mistake and hands it to
me later.

Letter

St Paul Apr 8-1941 on
Co Salvage Car Co. Walker
Minn.

Dear Sir

Under separate cover
a print of our right of way
map is being mailed to you.

On this map, the
corners to Sections 27-28-33-34
Twp 141 N R 9 26 W. as well as
the corner to Secs 10-11-14-15
140-26 are shown.

Do the records of
your office contain any
information on other
corners between the two
just described?

State Highway 140-26

Aug 1-1938 Collier

3

that is any information
showing that other
corners in this area may
have been preserved or
established in resurvey

Any data that you
might guess would be
much appreciated

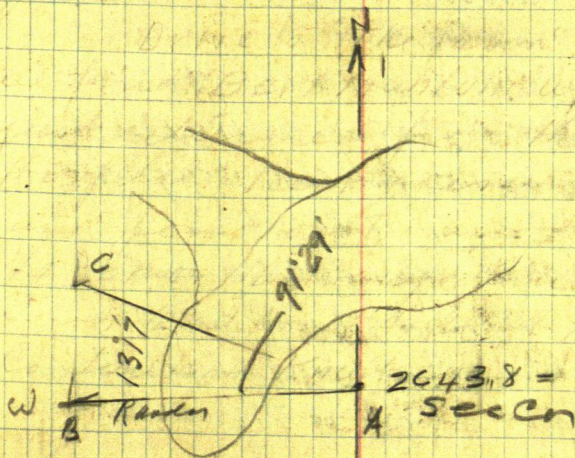
Yours very truly,

Department of Highways

G. G. Gladman

Engineer of Surveys

8 Design



May 2-1941 Friday

W.E. Kots and his car takes
me to Remer and South

We meet Geo Livgard
P.O. Remer Star. Rt

Lives on and owns Lot 2
Sec 3-140-26- Here since
1912 Old Co Road goes thru
his place. Got no "Damage"

Appraisers called at house
"Benefit" and assessed
his land \$10 To be paid
\$1. a year

He knew Melvin A Kemp ?
helped him and Mark Snell
survey roads & so on

1:00 pm

We drive so and meet Ed
Karger-Remer P.O. who bought
Lot 1- Sec 10-140-26 15
years ago. has buildings
on his land. just now
he is in charge of and lives
on East shore of Thunder
Lake

May 2-1941 continued

Drive back to Berner for
lunch - Mr Kots pays for it
3 PM

about 1-PM we first call
on Mr Karger who is
helping his wife wash
but can go with us
about 1-30

1-30 we return - pick up Mr
Karger who goes with us
till about 6 PM?

Mr Karger will help
on the survey and will
get another man if I
need one when I return
Monday morning

I am to make the survey
may not get any pay but
State may furnish gas for
my car

Mr Kots says I am to make
rate the cutter @ 50¢ an hour
Return to Walter lab
4 hours for Karger @ 50¢ - 82.00

John W. Carr

6

Remer District

140-141-26

May 3rd 1941

All day at Ct Ho Walker &

Copy notes

Inspect Co Record

Book of Surveys

Book "A" None

" "B" None

" "C" N^o 412 - 417 - 420

C 443 - 445 - 458

C N^o 417 gives $\frac{1}{4}$ B^t 22-23-

C 141-26 and more

"C" N^o 445 Subdivision

C Sec 10-141-26

"C" N^o 458 Subdivision

Sec 36-141-26

Book

"D" 140-141-26

N^o 502-504-505-506-507

N^o 506 gives So side Sec 2-140-26

Copy on Page 8 this Book

7

[illegible]

Recorded Feb 28-1921

EB Horst Defully

No angles given

Copied by Cms May 4-1941

8

State Highway 140-26

140-26

State Highway N^o 83

2

vs $\frac{1}{4}$ 2630

11

Surveyed by James H.

Flynn

Recorded By E. B. Horst Dep

Sept 13-1922

N^o 506 Page 60 Book 'D'

Caped by Jack Caro May 4-1941

Miss Kells

Miss Kells

Miss Kells

Miss Kells

10th Standard Parallel

So Line 141-26

East on true line So Side 31 $\vee 9^{\circ} 5'$

23.70 MC on W Side Lake Laura

Tam 5 N 83 W 115 =

Tam 6 S 80 W 116 =

4000 In Lake 8000 In Lake

East on True line So Side 32 $\vee 9^{\circ} 5'$

4000 in Lake (Laura)

41.34 MC E Side of Lake

Tam 6 S 40 E 45 =

Tam 3 N 23 W 98 =

8000 Cor 16 Secs 32-33-

Aspen 55 E 30. Aspen 8 N 2 W 30

East on True line So Side 33 $\vee 9^{\circ} 17'$ 4000 = $\frac{1}{4}$ Cor W Birch 4 N 57 E 11

W B 3 N 75 W 38

8000 Cor 33-34 & Pine 22 N 37 $\frac{1}{2}$ E 17 =

Aspen 8 N 72 W 24

East True line So Side 34 $\vee 10^{\circ} 5'$

28.60 (= 1887.60) Tam 3 N 37 W 28 = 18.48

Willow 3 N 72 E 76

4000 - 8000 In Lake

East True Line So Side 35 $\vee 10^{\circ} 5'$

2780 (= 1834.80) MC E Side of Willow 3

80 Cor 35-36 Tam 3 N 30 E 21

Tam 3 N 55 W 53

10

State Highway 140-26

US Notes 140-26

A-B-

C = N Cor 4-5 Post C" none

D" N Cor 3-4 Birch 6S44W16

Oak 14S43E34 =

E in Lake

F" Cor 1-2 - 140-26

Tan 4S18W92. Tan 4N37E59

1-2-11-12

NP28S82E32

NP30N11E48 =

WP30N62W135-

NP3542W224 =

10-11-14-15

Yellow Birch 8S55°W29

White Birch 6S70E75

White Pine 30N4°E108

11-12-13-14

Spr Pine 10N3E164 Fir 8N16W213

Asp 6S34E48

Asp 3S58W8

2-3-10-11

Ash 6N24E16

Aspen 7N87W19 =

Fir 8S25E18

US Notes May 4-1941

11

140-26

3-4-9-10

00KUN73E18

asp 6568E17

Birch 4N24W 6

Birch 6510W 31

OTOF@5 = $\frac{1}{4}$ Bet 11-12 None

12 State Highway 140-26

May 5-1941 Monday

Up @ 5-30. Get RR spikes
and short piece of Rail 3 ft long -

M & I RR. 7-00 AM take Reed

and Don Schultze - 7.05 Meet

Oats at office - Get shovel and

pick & spikes at Highway
truck. Drive home and back.

to Ct Ho. Lv Dahm's Monroe

Calculator at his office door.

Lv Walker alone in my

car @ 7-15-

Speedometer Reads 7944

At 7957

Pine River-Longville Rd 7965 8 AM

Enter Black Top Rd 7967 8:05

Sonborn Store-Remer 7979 8-20 AM

Enter Narrows Road 7980 8-35

Meet John D. Brigham Lot 56+4 7986 9.00 AM

Bill Rickenbach 1A 400 So of N Line

Leland Hotel St Paul

Ar 7990 9.15 AM

Find waiting viz

State Highway 140-26

13

Ed Karger

Herbert R. Seiffert No Cord
Member of Thunder Lake Trwp
140-26

Town Board

Geo Jenkins Ch. -- New ^{Sec 34}

Ed Waterhouse Trustee ^{Sec 8} 1 yr left

HR Seiffert ^{Sec 2} " New

Helen Toutant Clerk ^{Sec 12}

(Mrs Ed ")

Mrs G.H. Bluhm (Geo) ^{Sec 22} Treas

Ed Kager Assessor ^{Sec 10}

Appropriated \$800

Now Old Warrants good

3.15 to 3.45 Rain

Reg @ 2m 1/2 x Ch

So

14

$$\begin{array}{r} 52 \\ 6 \\ \hline 492 \\ 492 \\ \hline 5412 \end{array}$$

$$\begin{array}{r} 109 \\ 6 \\ \hline 654 \\ 654 \\ \hline 7194 \end{array}$$

$$\begin{array}{r} 62 \\ 6 \\ \hline 372 \\ 372 \\ \hline 4092 \end{array}$$

We drive to Cor.

22-23-26-27-140-26 where

US Naler Call for Birch 8N89E 82 = 54.12
 OOR 8 S 24E 62 = 4092 WP 24 S 19 W 109 = 7194

26-27-34-35-140-26

WP 18 S 9E 142

" 18 S 7 W 137

10-30 AM. Meet Arthur (A.J.) Ward.

Drive 8 1/2 Cor 22-23-26-27-140-26
 where we dig up 2 1/2 x 32" Galv Iron
 pipe - old wood stake sets NE 1 1/2 ft
 1 one inch iron pin sets 1 1/2 ft N
 and 1.00 ft E st

Drive back to Cor 14-15-22-23-140-26
 30 minutes for lunch all
 three of us have own lunch
 PM

1-PM. Back to Cor 10-11-14-15

State Highway

May 5-1941 continued

At Corto See 10-11-14-15-140-26

US. Naler Call for

Yellow Birch 8°S 55°W 29 Lks = 19.14 ft

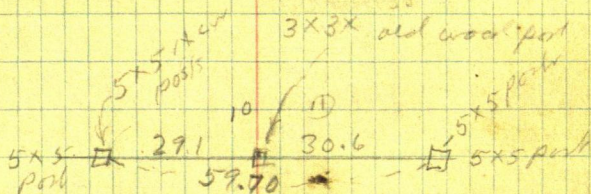
White Birch 6°S 70°E 75 = 49.50 ft

White Pine 30°N 4°E 108 = 71.28 ft

We dig up 3x3" old stake in

E N-S Road Two new posts

5x5" - 3 ft Hi Each Side of Road



Ch So From 1/2

@ 751.8 Hwt

1490.70 Hwt

2642.90 See Cr wood Sls

1152.2

738.9

1891.1

751.8

2642.9

2642.90

1490.70

1152.20

2642.90

751.80

1891.1

1490.70

751.80

738.90

North bet

1152.20 Hub + 738.90 =

738.90

1891.10

1891.10 Hub + 751.8

751.80

2642.90

At 2642.90 N $\frac{1}{4}$ Corals

Eart 2.28

.0008627

2643.) 2.2800

21144

165601

15858

7020

5286

17340

18501

1152

8627

8064

2304

6912

9216

9938

304

21

8627

26x3

25881

34508

51762

17354

22901061

1891

8627

13237

3782

151346

15128

16313657

64

2

71

2907 17

POT. RRSpike Hat 2 N-S Road

1891.10 N Ties on Random. 26 W of Line

Twin Oak 3rd & 4 joined at base 8'

N 53° 20' E 38.40

Br Oak 9 N 55° 30' W 45.82

To Spat at base

Turned from line line N.

Nati: I am to change line to

Corrected Hat which sets 0.26

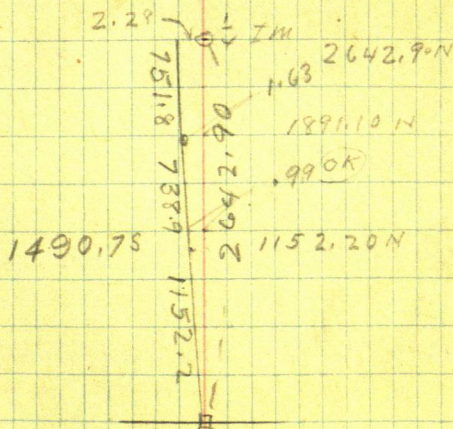
E of tied random Hat

Nati See 2nd Correction of this hat 0.516

Page 21 To True Line

and Latis a 3rd correction by mistake

another 0.51. Note



18

May 5-1941 cont'd

X over Corrected Hub 1891.10
N of Cor to Beer

Pass line thro Iron $\frac{1}{2}$ Cor
Extend line N to Red hill
Set hub and Outh at 6-PM
Take Ed home 6-10-

Spedom reads 8002.

" 8013 at Top 6-35

7-31 at Walker Spedom 8049

$$\begin{array}{r} 7944 \\ 105 \end{array}$$

105 miles

1.14 Hour from today

8 " for the other two each

Rain 3.15 to 3.45

15 minutes for lunch

9-30 - PM. on water

Time Sheet

Working For Minn Highway Dep

1941 May

John W. Curo Tech Hours

Curo Car Miles

Expense

Herbert R. Seiffert 50' North Cd

Eckarger

Edmund V. Larson CE

Donald Schultze

Safer F Bramby

James Reed Curo

State Truck

Copy Time S/WC

2	3	4	5	6	7	8	9	10	SUN	11	12	13	14	15	Total
8	8	0	14	10	6	10	14	-	0	0	8	10	10	13	Days 10 Hours 100
-	-	0	105	-	-	-	-	-	0	0	-	-	-	-	
-	-	0	50	-	-	-	-	-	0	0	-	-	-	-	
0	8	0	8	9	8	9	-	6	0	3 1/2	9	9	8	9 1/2	Days 9 Hours 70
4	-	0	8	9	8	9	-	6	0	3 1/2	9	9	8	9 1/2	Days 10 Hours 74
-	-	-	-	10	-	-	-	-	0	0	-	-	-	-	
-	-	-	-	10	-	-	-	-	0	0	-	-	-	-	
-	-	-	-	10	-	-	-	-	0	0	-	-	-	-	
-	-	-	-	10	-	-	-	-	0	0	-	-	-	-	
-	-	-	-	10	-	-	-	-	0	0	-	-	-	-	
-	-	-	-	10	-	-	-	-	0	0	-	-	-	-	
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10 25 = 50

Continued to page 67

20

May

April 6-1941 - Ref. @ 5
L.V. @ 7-30

70711
46.67 4667
49 4977
4242.66
42 426.6
282844 7
33000763

Social Security Act.
Act No:

476-12-8685

Edwin Karger

Start 8-30 AM May 6-

2642.9
9
2643.8

140-26

21

2042.9
 9
 2043.8

2-2-2-1

Ties to Cor 10-11-14-15

2x2x36' pipe N 45° E 47.76 46.67

Set in pile of stone

NP 12" N 40° 19' W 91.90

NP 15 S 7° 14' W 332.55

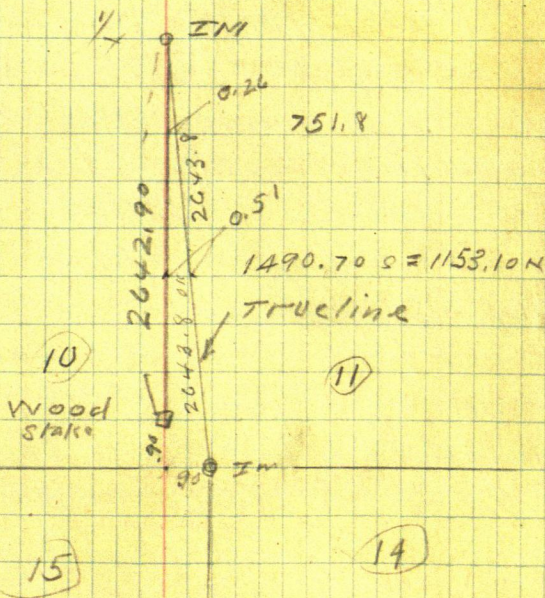
12" W Oak Old Spots S 15° 04' E 152.65

NPS 7° 14' W 332.55

N 45° E 46.67

1152.2

5x5 Post N 89° 45' E 29.80
 5x5 Post N 89° 22' W 30.20
 To d Post



22

May

April 6-1941

Walter E. Kotz in charge
Sends Larson and his Truck
Crews with me

Reed-Don and I in my car
Larson and Branby in truck

At 9-AM. Find Korger
Seiffert cutting North- They
started work @ 8-30 AM

Reed and his π cut N.
Larson- Seiffert- Korger and I
drive Solo Car

10-11-14-15-140-26

We dig up Im - 0.90 So and
0.90 E of \square wood stake we used
yesterday for the corner

New Correction

We dig up old Im - pull it
up- straighten it and put
back the broken part which is
now about 26" long- The road
grader has cut off the left part
of a 4-foot Galv Iron pipe $2\frac{1}{4}$ diam

After re-placing the $2\frac{1}{2} \times 26$ " pipe
bottom end up for True Cor 11
10-11-14-15-140-26 and
has to take new true

See Page 21. for true

Correction Pg 21

2nd Correction

$$2643.8 \text{ in } 0.90 = 0034$$

Hat 751.80 we set East 0.26

" 1490.70 S. we set E 0.51

At 2643.8 to Cor set E 0.90

PM

From $\frac{1}{4}$ Bat 10-11-140-26 we el
North 3-6-9 + 1177.45 - 0.15 for slope

$$= 1177.3 \text{ N set Hat } 0.40$$

$$1177.3 + 131.7 = 1309.0 \text{ we set}$$

Hat west 0.45

$$1309.0 + 229.3 = 1538.3$$

we set Hat West 0.52 to True Line

Tower Corrected Hat 1538.3

BS on line line and continue
North on line line but 10-11

North but 10-11-140-26

Reed and his crew

$$1177.30 + 131.7 = 1309 + 229.3$$

$$= 1538.3 - + 130 = 1668.3$$

$$+ 285 \text{ over bog} = 1953.3$$

$$+ 100 = 2053.30 \text{ Hub on Top}$$

$$+ 300 = 2353.30 \text{ pin } + 35.00$$

$$= 2388.30 \text{ Hub } + 160 =$$

$$2548.30 \text{ Hub} = 2642.9 +$$

$$0.90 = 2643.80$$

Pull up Hub 2642.9.

Branby at π over that

2548.30

Set flag on N side of
Lake -- + River

Reed and Don set the flag
and return to π .

π over 2643.8

True Cor 10 2-3-10-11

140-26 Reed at π

Sight North on Flag
over lake Turn NW way
at 90° 29' hit East end
CCCLine

May 6-1941.

25-

Larson and I drove N and
then 1° more To $91^{\circ}29' =$
 $S 88^{\circ}31' W$ and set flag
for Random 166 cut
West Then set Triangul-
ation Flag $13^{\circ}17' R$ set
flag

26

May 7 - 1941

To Hackensack to find
Jim Flynn 7. old
Runway on 10th St Parallel
60 miles
8 Hours for crew

#19 Hwy

7157

27

May 8-1941

All AM in Ct Ho on looking
up old maps
PM

1-0x Lr Walker and return
for gas Chevrolet Garage

get 9 ⁵/₁₀ gals

8125

7157 TRUCK

Lr again 1-20 PM Spedom 8292

Ent for Road 1.55 .. 8316

= 24 miles

2-10 To 2-20 Remen

8328

2-35 ar NE Cor Sec 10-140-26-

8337

45 miles

9 Hours

Ar Walker 6-30

Spedom 8389

May 12-1940 Monday

Up @ 6-AM - Take Reed and Don Schuelz
to Highway office - Find Floyed

Skinner and Maxson at City

Get out their deed Book

Harry Paddock writes deeds

\$1.50 Skinner pays on \$125

in full

10 AM - Meet Mr. Kolby on street

and tell him I am leaving

in an hour +

11 AM get tank filled

Levi E. Pronovost

Motor Inn Garage Walker

5/12-41 #7157

7.5 gals 4.5

109

State tax 4 +

30

Fed Tax Exempt

1.39

John W. Curo

Speedometer reads 8632

Lv Walker 12.35 PM

alone

3 1/2 hrs

or Tall pine 1-50 Specimen 8678
Find Karger at Thunder $\frac{8632}{76}$

Lake Dam at outlet of Thunder
Creek Drive East and at
3 PM. pickup Herb
and return to cor

2-30-10-11- 140-26 AM

spike

New Tree 12" Black Ash

N 63° 10' E 35.65

14" Elm S 43° 50' W 15.12

Poplar 14 S 67° 25' E 25.62

DRIVE 2430 miles
1/21/10/11

TURNED from true line

SE Cor of ^{east} East "Pat Hali"
lies NW 15 ft to water's edge
River runs thru this

connecting Thunder
Lake with Big River then
to Willow River

Focus North on Flag 1000 ft
over lake Turn NW angle

91° 30' (or 91° 30½') and on

West @ 25 ft incl. water

S 75° W for 350 ft then ~~see~~
West 30° and NW to line

Copy - Gas by Caro
 Levi E. Pronovost
 Motor Inn Garage

1st #7157 Walken 5/5/41
 State Highway
 10 $\frac{1}{2}$ gas 1.50
 1 qt oil 25
 State Tax 42
 Fed Tax Exempt $\frac{5}{\$2.17}$

5/8/41 - 7157 State Highway
 9.5 gas 14.5 138
 State Tax 38
 Fed Tax Exempt $\frac{7.76}{}$

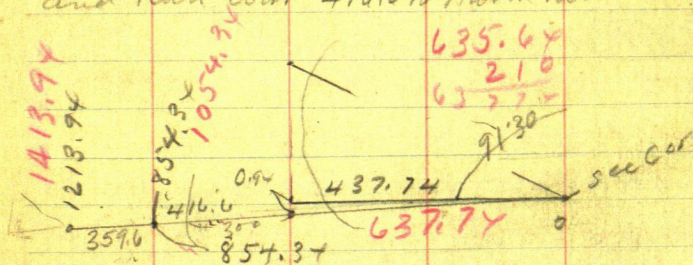
5/10/41 #7157 - 11.5 gas
 11.5 @ 145 1.67
 State Tax 4 46
 1 qt oil 25
 Fed Tax Ex 238

5/12/41 = 7.5 1.09
 State Tax 30
 1.39

over

34

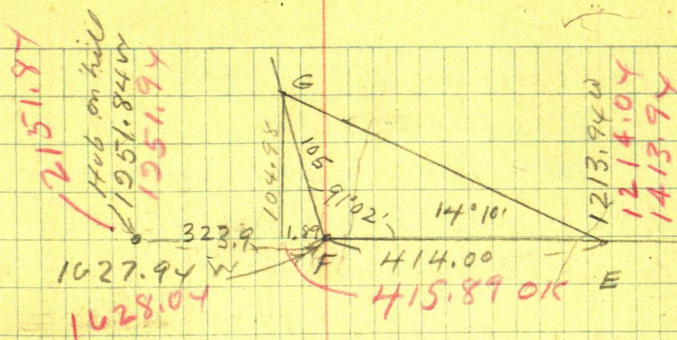
May 13-1941 Tues

up @ 5- L. Walker 7 at 8-30 Final
Ed and waitingCut line to fit over π line and old
cutting Change line like
a point 0.94 ft to of Hut 437.74
and Run West 416.6 to Hut on hill

854.34
 845.34 W Hut RR spike on hill bet lakes
 Ties: WP9 N 86°15'E 26.00
 WP10 22 N 27°30'W 41.90
 WP105 14°50'E 36.05

From 854.34 ch West @ 160 ent
 cedar swamp @ 300 feet
 @ 359.7 ft Hut = 1213.94 ft
 25 ft East of water which runs
 N 45° E and S 45° W

Flag over lake west another 14°12' E
 Eat lunch: 1 PM & over F.



Eat our lunch - 30 minutes

PM

work till 2-30 PM Set in car

till 3-30 PM. Lose one hour

3-30 PM Walk north π on the hill
west of New Road Forest East
on Flag @ 854.3x.

Figuring $N1^{\circ}02'W 105$

Sine $018034 \times 105 = 1.89$

Cos $999837 \times 105 = 104.98$

$$14^{\circ}10' \text{ Cot} = 3.961652 \times 104.98 \\ = 415.89 - 1.89 = 414$$

$1213.94 + 414.00 = 1627.94$ Hub
over 2nd Link

36

Main State Highway

^{Gas} 8 Miles Total
~~1628.04~~
 From 1627.94 West Cham west
 @ 80 feet L. around @ 90 feet pin + 92 =
 182 feet + 141.9 = 323.9 added to
 1627.94 = 1951.84 Hub on First
 hill RR spike ~~12151.84~~

Beg @ 1951.84 Cham ~~2151.84~~
 West

Ties Red Oak 8 N about 20° E 15.22
 RR Spike in heart of Green 9"
 N.P. Stump N. about 80° W 42.75
 West 393.56 To 2345.40 ~~2345.40~~
 To hub (RR spike) on ²⁵ small ~~2545.4~~
 hill in Right of way ~~2545.4~~

To get this 393.56 we
 begin at this Hub and ch
 East - Herb with rubber boots
 goes East over Cranberry
 bog @ 60 enter bog at 230 L.
 @ 276.7 pin in side hill on
 same level as 2345.40
 From 276.7 E pull tape up
 hill to Hub 1951.84 and plumb
 line down hill West 116.86
 276.7 + 116.86 = 393.56

May 13-1941

Time

37

$$2151.84 = 2545.40$$

added to 1951.84 = 2345.40

Note: Bog is egg shape we cross narrow north end which extends 75 ft N. and 300 so.

@ 2115 west end in bog @ 2285 L.V.

2345.40 Hub in R of W.

Ties 2545.40

"

2545.40

From 2345.40

West 2426 Enter East edge

of new fill (P.V.R.A.) in Cranberry bog 2471 ^{west} Edge 2645.4 pin in

bog + 42.6 = 2688.00 stake ✓

Foot of hill L.V. Bog 2688.00

Then up hill + 90.50 =

2778.50 Stake-side hill

+ 142.50 = 2921.00 Hub on

East Brink Big Hill + 37.5 =

✓ 2958.50 Hub on to highest

hill 3115.5 6.06 PM Set pickets

West Pack x 10 Car. L.V. 6-30

= 8 To 6-30 = 10.5 - .50 for lunch

1.0 for rain leader 9 Hour

Ar Walker 8 PM. Speedon 8835 =

38

May 14 - 1941

Up 7-AM - heavy thunder
storm last night Roads heavy.

Check notes:

Gas 11.3. Gals

1 qt oil

2.38

10-00 AM Lo Walker

Spedown Road 8835

10-15 find Mr Koltz on highway

10-30 Reminto Car stuck
in mud Spedown 8860

Donald Blessing of Wadena
Whin Flour & Feed Salesman
stuck 10-30 To 12:00 Noon

Wilbur Plustad - Boy River
P.O. lives 1 mile East and 1/2 mile
N of West end of Remier Tar
Road is to get \$2. for his team
to pull out Blessing

Boy arrives with team
pulls him out Blessing has
only a \$10 bill - no change

He will leave the \$2 at
Fuller store at Longsight

May 14-1941 cont'd

I leave back @ Longville Road

12-10 PM Spedon road 8862

12-30 @ Longville Spedon 8867

1-20 PM Hit Rimer Road

SW Cor Big Pine Lake Spedon 8882 ^{15 min} Longville

1-33 PM on Thunder outlet 8885

Blow Horn Herb corner

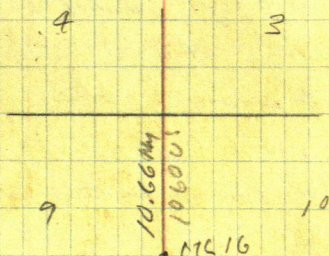
I finish my lunch and copy
US Notes

MCH 16-140-26

NP 20 N 56 E 10 = 6.60

NP 12 N 78 W 11 = 7.26

140-26



40

May 14-1941 continued 3159.5
2-30 PM T over 2958.5 West
on random Bet 3-10-140-26

On Top Big hill

Ties:

Red Oak 24 N 17° 40' E 30.30

Red Oak 22 S 31° 05' W 47.95

Red Oak 26 S 9° 40' E 44.00

Thence down hill

West 134.30 T 3092.80 8292.8

RR spike in 4 So Half

of green 16 x 24" Red

Oak stump 30 ft East
of Swamp NW SW

3123 enter Swamp 3474.3

3092.8 + 181.5 = 3274.3 Hub ^{OK}

in Swamp 40 ft East of
water 2314 enter lake

^{Black} Deep Spring Lake No inlet
No fish Tam linkers on edges

Herb sets Hub over lake

West

ABC
DEF
GHI

8903
8888
15

41

2958.5
134.3

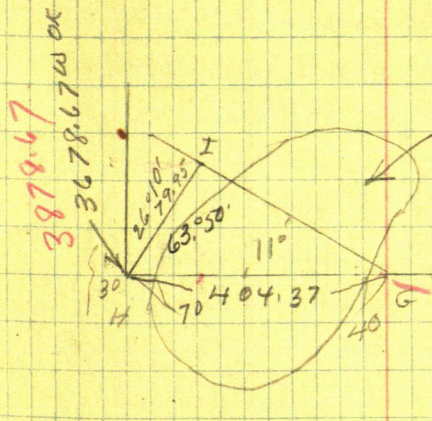
3092.8
181.5
3274.3

3692.8

Call this
"Black Spring Lake"
Horns that!

3274.3 w/41

3474.3



From Hub on first ridge over lake at
East 102 pin 159.50 \pm 24" green
Oak Slump @ 217. Hub on low ridge
271.60 Δ Hub & I

Gladiolus Reads 395 NG = 404.37

Chain west 300 set stake

Set Hub on top big hill
about 900 ft. dist. and
Out 6-24 7 Book loca

Lv Thunder Lake Channel Dam

6-30 Spelon 8885

8 Horns farm

Take Longville Road 8888.1/3

at Longville 7-20 8903.1/3

Longville 15 miles

42

8908 $\frac{1}{3}$

May 14 - 1941

8908 $\frac{1}{3}$ Longull road x 2x

8888 $\frac{1}{2}$

20 2 miles via Longull 7:35 PM

8.15 at Walker

8929

Total 94 miles

at 4250.30 west set white stake

Set Hut 600 or 800 west on top

of last hill LV T + ch

Quit 6 PM - 630 at 20

8973 75
8951 25
22.5° 43

May 15-1941

6 get off in 6 am
Lv Walker 7-30 AM. Pickup - Reed,
Branby and Schultze at Potvin Gar.
Spedorn 8929.

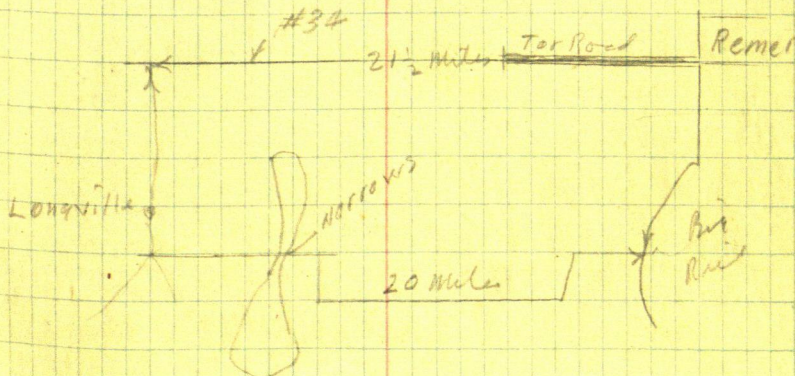
Drop my me at Island

8-30 Ar. Longville Road Sped
8951 $\frac{1}{2}$

8-45 Red Owl Store Remer - 8966 +
9-03 Longville Road @ SW Cor Rice Lake
Spedorn 8978 $\frac{1}{2}$

Note: "Short Cut" via Longville
Via Longville 20 miles to 34
Via Remer 21 $\frac{1}{2}$ to entrance
Longville Road with 34

Some Tar Road makes via Remer
West way



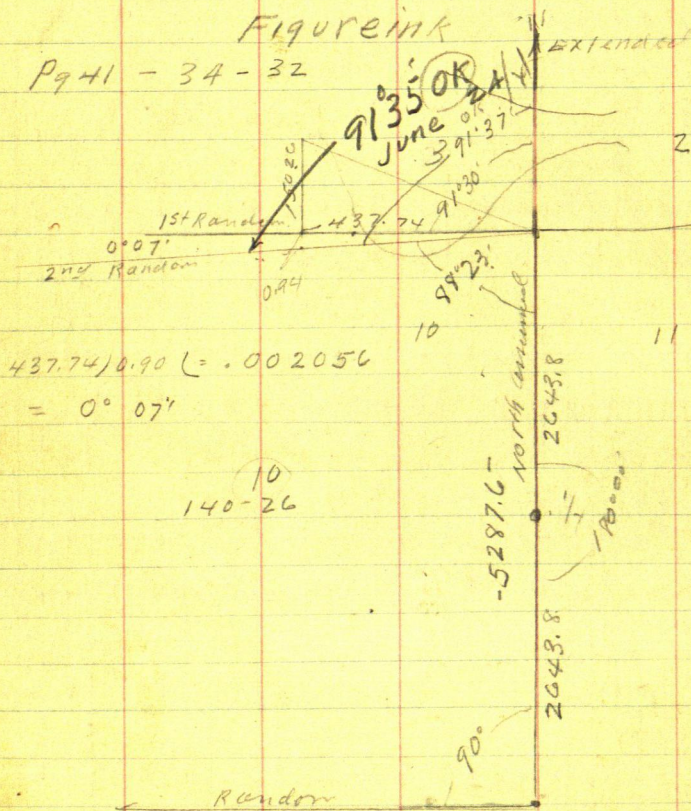
44

May 15-1941 cont'd

Cloudy Cold Ar. Thunder Lake
Outlet-dam. 9-30 AM. Speedom 8976+

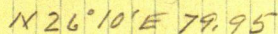
Figure in K

Pg 41 - 34 - 32



See Page 32-44-81

45



$$\cos 89.7515^\circ \times 79.95 = 71.7514$$

369.11

3526

40437

Stadiq Reads 395NG = 404.37 OK

424' green Red oak slumps on limestone

From $3950.30 \text{ W} - 217 = 3733.3 \text{ W}$

Figura West

3678.67 W Hobon A G 70 W of water

3733.30 w Hub on first Low Ridge No Tie.

3790.80 & Big stump

3950.30 Hub on low Hill Truss 4150.30

Map 66 N 29° 25' E 22.05 R.O. 30 S 78° 35' E 32.10 1:6000

46

May 15-1941

4150.3

Copy pg 45 At 3950.30 W Hub on

Low hill - All Hubs are RRS peaks

Maple GN 29°25'E 22.65

30' Red Oak S 78°35'E 32.10 To

Spot at base of bath

4150.3

From 3950.30 chain

West 300 To 4250.30 white plate

4450.3

9-30 To 11 AM Figure above then
walk west - find crew

Pack all 3 lunch boxes
west - meet crew coming to
dinner E on N shore of Thunder
Lake. PM.

From Hub under π on Top. begin
East - Down Hill @ 260 Hat

300 - pri + 233.7 = 533.7 To plate

4450.3

4250.30 added to 533.7 = 4784.0

4784.0

West Hub on Top under π - 260 -

4524.0 West Hub on East slope

4724.0

4987.

4784. Continue West down hill +

2224 = ⁵²⁰⁸5008. Hub on west slope

+ 2224 = 5234 Hub

+ ^{5434.5}48.5-

Hub on low Hill 5282.5-

+ = ^{5482.5}5482.5-

Road NWSE

Herb and Ed have cut
a line So - Picket line beg.
20 ft West of tall pine on
Big hill cut So toward
Cross + a mile or so So
over lake. Their line hits
about 18 ft East of MC #16

Walk N and start a new
line 18.5 West of first line
and 1/2 over Random Hub
534.3 North of MC #16 ran
Focus on big Cross +

a mile or so So and the

South on 2nd Random

300 pin + 111.6 = 411.6 Hub

@ 534.3 MC #16 sets

West 0.92 of 0 foot

48

Ed walks half a mile E
to get my flat boat

Herb and I go N

X over Hub 534.3 N
and cut line

North on random

From MC #16 N to See Cr
os vales call for 1066 Lks =

703.56 feet See Page 39.

169.26 To 703.56 N

From 534.3 N ch N 169.26 To
703.56

State Highway

49

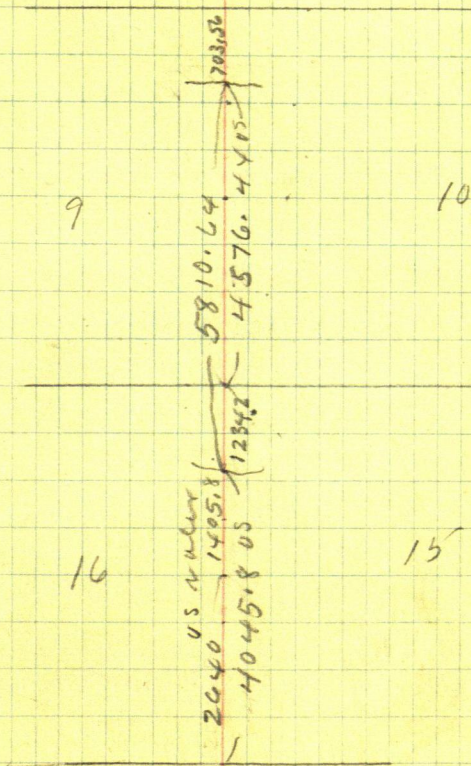
$$5810.64) 0.92 (= 000158x$$

$$5810.64 \text{ N gain west } 0.92$$

$$5933.34 \text{ N } \text{ " } \text{ West } 0.94 \text{ sh}$$

$$6344.94 \text{ N } \text{ " } \text{ West } 1.00$$

$$6514.20 \text{ N } \text{ " } \text{ West } 1.03$$



50

179 Cal
9209
8751

TIES TO Corrected Hub
534.3 N of MCH 16.

NP 24 S 53° E

Red Oak 10 N 30° W

5' R Oak 319° 50' E

54 34.0

52 34.0 Chain West 7.0
7

52 41.0 P.I. TRUE

~~54~~ 41.0 Lin with Random with

SE angle Reads

92° 09' NE Angle 87° 51'

~~88.10~~ 88.10 To Corner

T OVER TRUE COR

Focus Point True Line

IM 2x20 set by Span
Bear S 4° 18' W 43.10

6-20 Quib

Start 8- 3½ AM.

6-55 at the Car 7-00 L

for Walker Spedon 8976 +

8.05 Air Walker

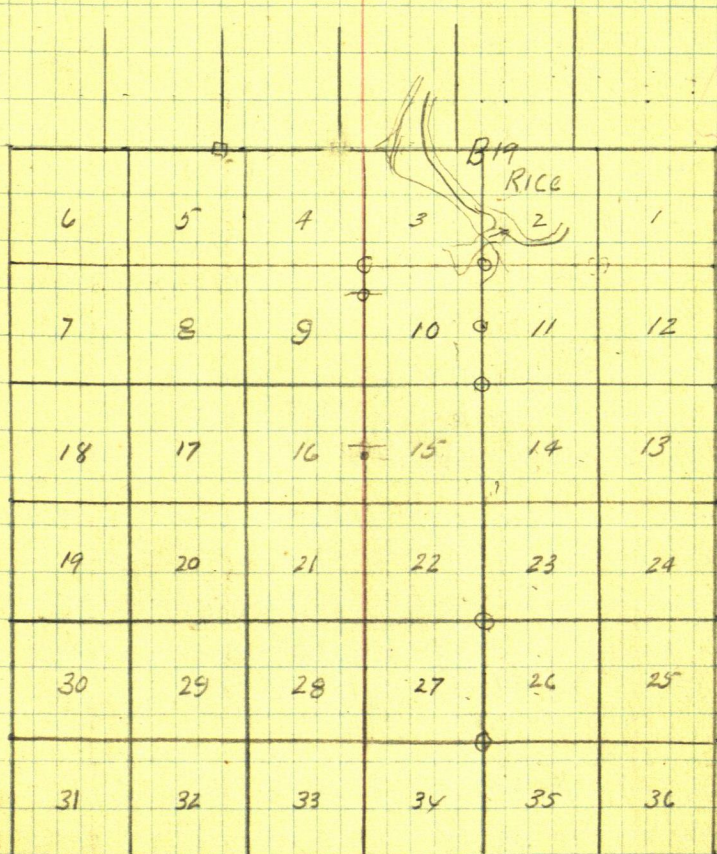
9023 = 47

End 13 Hours

May 15 - 1946

140-26

51



52

140-26

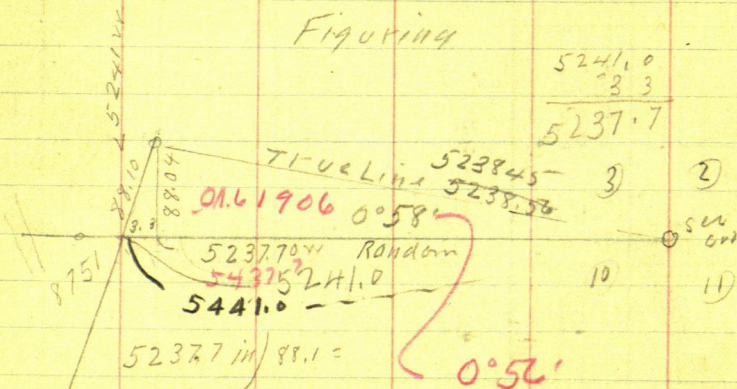
May 16-1941 Friday
 up @ 5¹⁰ AM - @ 7 AM turn in
 time for crew on Page 19 - this book
 Get 10 $\frac{1}{2}$ gals gas
 198 out 25°

Lv Walker about 8 am

Use Trip Speedom 35.9 at Remer
 46.3 at CCC Camp No 13003 at
 Thunder Lake outlet

Herb and Ed are cutting out
 new bld at NW Cor Sec 10

Figuring



2718.85 W $\frac{1}{4}$ gas N 44.02
 to $\frac{1}{4}$

Stal Highway

53

 $87^{\circ}51' - 2^{\circ}09'$

140-26

Since $999296 \times 88.1 = 88.04 \text{ N}$

Cor $0.7516 \times 88.1 = 3.30 \text{ E}$

L.016808 (L.016809 OK

$$5237.7 \overline{) 88.040}$$
$$\tan \theta = 0.58'$$

52 377

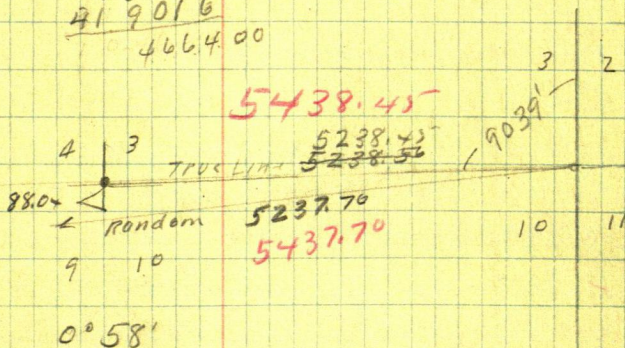
356630

3 5 6 6 5
3 1 4 2 6 2

4 2 3 6 8 0

419016

466.400



Pine

Cor

54

correction .0161906 = 501

Ret 3-10-140-26 = .016809 N for
each foot West

437.74 W goes N 7.36

854.34 " N 14.35

1213.94 " N 20.21

1309.40 " N = E $\frac{1}{16}$ in Lake 22.02

1627.94 " N 27.36

~~2151.84~~
1951.84 " N 32.81 32.81~~2345.40~~
2345.40 " N 39.42 goes N 1.79 39.422618.85 " N 44.02 $\frac{1}{16}$

2688.00 Stake L & bog 45.18

2921.00 W goes N P 9 37 49.10

2958.50 " N 49.72

3092.8 " N 51.99

3274.3 " N in bog 55.03

3678.67 " N 61.84

3733.30 W " N = 62.75

3790.80 " " N 63.72

3927.84 " " N To $\frac{1}{16}$ Cor 66.03

103950.30 66.40

4524 76.04

See Page 78-

May 16 - 1941 cont'd

55

Find Ed and Herb cutting brush
for line to NW Cor. Sec 10-

I figure corrections at car
eat lunch P.M.

T over random Hub 2345.40 W

Turn 90° ch N 39.42 Hub on line line

T & 1951.84 Turn 98° N 32.81 set
hub on line line T over 32.81

Focus West on line line chain

29.31 to 1981.20 Hub on line line

All Hubs are R.M. spikes

A back on Corrected Hub 2345.40
on hill East half of new roadway
Ties viz Corrected Hub 2345.40

Spikes in B.M. in root of 13" NP
bearing N 49° 55' E 60.25

8' NP S 65° 40' E 36.00

To spot 4 ft up blazed also at
base. RR Spike East 21.9

From corrected Hub 2345.40

West 273.45

set 1/2 Cor

2618.85

2" x 4" Capped Galv Pipe 186.3
West of Curve @ Sta 681 + 70.5

56 State Highway - 140-26

May 16-1941 cont'd

We try to locate Tangent of new road but cant do it

Walk So to top of big hill Find



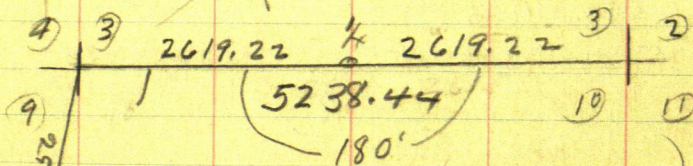
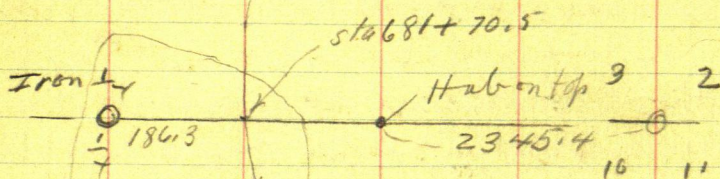
Note: Did not think to look up station but it was about Sta 676?

POT

23

pot spike
8 1/2

8" nr



alt 27 1/2

alt 137
MC#16

Thunder Lake

9 Hours for crew
crew 11 called 10"

May 17-1941

5.7/10900

5.7) 99.0 = 17.4 miles per gallon

Tank holds 14 gals @ 17 = 240 Miles

Drive to Pine River Hospital

Jim Flynn is not there

Drive to USMC N: 15

MC15:

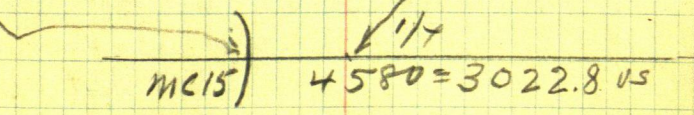
(NP 8S 88E 6 =

Sp 8N 12E 27 =

It. X @ 3 = 1/4 Cor

Asp 3 N 30 W 23

Birch 4 S 2 E 28


 MC15) 4580 = 3022.8 US

 all day looking up US files ^{alone} Home
 late Call at 10 Hours

58

May 12-1941

up @ 5-30 - Go at 7-30

11 1/2

Spedom 9352

19t oil

Truck N 7157

Met young Mr Dewey Truck
driver Lives on the "Island"

7-46 L V Walker

Spedom 9352 - 0000

Pick up Herb @ 9-15 Drive

So and West and find Karger
cannot go - He is assessing and
will also have to move to-day

Herb and I work alone

Dig up I M at Cor 9-10-15-16

140-26 10-11-14-15 and ch

aim. Chain on new least line

Weston Random 90° to East line

Sec 10. Met Karger and a Mr
Kadex

West 30.0 pin - $111.6 = 188.4$

about 2 new Road at town

$8\frac{1}{2} 624 + 10$

210 pin in line Big Cranberry bog

$2-5 = 510$ West @

@ 510 - 80 = 430 slake point for
Hub on low ridge

600 pin in bog

9-pin 1200 pin in v edge of
up tunnel root 12.40 pin in bog

1275 L to bog NE S-

1500 slake

Then walk NE and SE to
Car Drive & find RR Spike
at corrected Hub

Page 17 - Nals: Ties

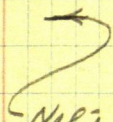
Page 21

At Random Hub 1490.7 S Page 21

we pull up random spike
and set it East 0.51 to

True line

Ties



Nals: Too far E 0.51

we corrected this hub Ties 0.26 going

N and 0.51 going S so this was its

line position May 12-1941 we forgot that

we had corrected it for the last time

and set it another 0.51 E It must be

set back later Cues June 12-1941 Plotting

60

1944

May 19-1941 cont

A over Im Co 10-11-14-15-140-26

Focus north on line line

Turn NW angle 90° and run

West on random bet 10-15-140-26

PM

West bet 10-15-140-26

1500 + 202.3 = 1297.7

Hub 1500 + 112.3 =

1612.3 Hub 1657 & Road

N 80 E S 80 W - 1500 + 217

= 1717.0 Hub + 300

= 2017 Prin 2317 prin

+ 63.8 663.8

Hub 2380.8

+ Road about 35 ft So

2380.8

183.2

2564.0 Prin Road 35's

176.7

2740.7 Hub +

223.3

2964.0 Hub

Ties To Random Hat 2740.7
W Oak LN 30°W.

W Birch 5 S 37°06'W

2964.0 -

11.7

2952.3

2952.30 Hat on Top

Ties To 2964.0 on Random
NP14N 42°30'E 18.85

~~NP11N~~

NP12 S 14°27'E 64.90

2964.0 is on West slope of
Hi Hill overlooking
Thunder Lake

US Natl. Sec Page 57

MCN^c 15

NP8 S 88E6 = 3.96

SP8 N 12E27 = 17.82

Went 131.6 To 3095.6

MC has S 4840E 41.80

S 73°30'E 35

2964.0
1311.6
3095.6

2964.0 Chain Down soft hill
West 131.6 To 3095.6

Hub on sand beach 35 ft + -
west of old sea wall

Tr over 3095.6

Temp MC bears $S 48^{\circ} 40' E$ 41.80
Figures Old US Scribe marker

on So Side old NP Stub
bears $S 73^{\circ} 30' E$ 38.0

Roaring Thunder for lost half
hour Quit at 5:35

Beat it up big hill 5:36 on top

Storm hits 5:37 we are in the
car partly soaked storm bursts

Rain pours in a deluge

5:45 stops - we go back down
big hill to check chain 41.80 and
38.0 OK.

Take lies to 3095.6

8" WPN about $50^{\circ} E$ 13.00

7" WPS about $80^{\circ} W$ 8.00

NP 6 S $20^{\circ} W$ 22.50

6:00 Back at Car

Herb goes home - will return by

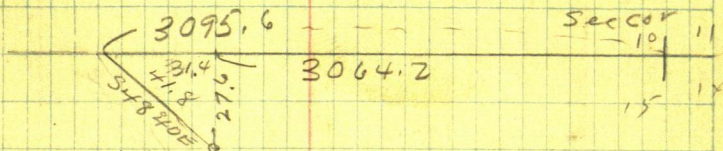
May 19-1941 cont

43
3.87 2

63

Figure

140-26



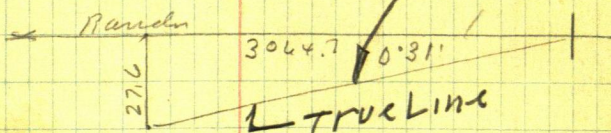
S 48° 40' E 41.8

Sine 75088 X 41.8 = 31.4 East

cos 6604 X 41.8 = 27.6

(10)

June 26-1941
90° 30'



3064.2) 27.6 = L 100900 = 0° 31'

Correction

430 gas so 3.87

Quit at 6- and start again at 7-

Let at 7-30 Herb work 9 hours

Come home via Remer - Woods

a wash lake Longall Road via

Booker in blizzard rain slope

9-15 Home at 9-30 Aspidon 9479

127 miles

64 May 19-1941

May 19-1941

Time for Herb 9 Hours

Time for cars $13\frac{1}{2}$ hours - Called "10" Hours

State Highway
Rennet

65

May 20-1941

up @ 5-AM Clear cold no wind
Speedom 94 79

May 26-1941 Monday
Yesterday I got ready for an early
start Pot in 15 gals gas 17 oil

15 @ 14.5-

2.18

State Tax WET 24

60

17 oil

26

Fed Tax exempt

303

Signed W E Katz

Ry JHCuro

Note: The gas was 14.7 gals

but head office requires

Even gallons -- will make up the

0.30 of a gal over line

Tank Capacity

1941 DeLuxe Ford holds 17 gallons

Tues 28th

Freedom Sunday 9609 - Trip 0.0
9-30 AM: Sunday L & Walker

Sunday I drove to Ten Mile Lk
after getting the gas

68

May 27

Rain - all day in Ct Ho

Evening - Reed takes car to Reed
Spidon

Lv for Reed 9671 Trip 61

May 28-1941

Up 6 - Cloudy - Reed eats
breakfast with Martha & I

Reed takes car to Bill Nubar
Garage and puts in

14 gals gas

19 tall Spidon reads 9809

14-

5295

9609

200 miles

14) 200

60
56

= 14 miles per gallon

Trip reads 199.7 OK check

Note: Reed pays \$2.95 T. Nubar
State does NOT pay for 15-days-gar

John W. Curo

May 28-1941 continued

Mail letter to Bill Stone and one
to L V Westman 4309 Park Ave Mpls
that I will be on Cross Lake Sunday
Sunday - June 1-1941-2 letters

8.05 Lr Walker Speedom 9810
Trip set at 0.0. Full tank

Call on Jim Corenson

Call on Ed. Hendrickson - Remer

Ar at Herb Seiffert Res 10-30

Lr word with 6 year old girl

'Surveyor wants Herb this PM'

Drive W & S to Min Highway

Eat my lunch 11 to 11-15 PM.

11.30 AM Start for Karger
Resort - Res - Road bad on
new fill put in by Town
Board - Stick in Karger
Road - Karger boys come
from school at noon and
helping Ed Karger comes
at 1:00 PM. PM and we get
out

May 28-1941 continued

We drove N + W - SW - S + E

Li Car on lip of Hi Point at
big lone Norway overlooking
Thunder Lake - Pack T N
300 ft - 10 wood hut set
for True Cor 10 Rev

3-4-9-10-140-26

pull up wood hut and put
in its place 2x32" Boiler tube
pipe for True Cor

Tree

20x24 inch Red Oak Broken Top
Burned flat to side

Spot at base near SW Cor
bears N 28° E 53.15 in Sec 3

NP 20 N 4° 50' W 122.00m in 4

NP 14 S 59° 05' W 94.10 in 2-9

Lean SE slightly

Red Oak 10 S 7° 11' E 96.10

To spot at base Tunnel
from line line to

Jim 13 and Bruce 7
help

3:30 PM Lv and drive to 10th
Parallel.

6x6x60" old Post broken off at
base - we drive 2x26" Border Tube
piper in core of old base

Focus a mil E on 2 road

JP 12 N 45° 07' E 89.45

W Birch 6 N 58° W 44.40

JP 14 S 53° 25' W old Scriber

Marker 61.60

H

NP 12 S 75° 15' E 55.25

Old Scriber In

Chain East 133 To about
2 Road running to

72

Time Sheet

1941

Sentin See File 357

John W. Curo P 19-67 This Bk

May Hour @ 50¢ as chairman

2 10 @ 50¢ 5

3 10 5

5 10 5

6 10 5

7 10 5

8 10 5

9 10 5

12 10 5

13 10 5

14 10 5

15 10 5

16 10 5

17 10 5

19 10 5

28 10 5

75

\$50 pd June 1-1941

74

June 12-1941 could Plating
See bottom note on page 59 as to
90° angle on to line Dec 10

$$1153.1 / \sin 0.51 = .0004423 = 0^\circ 1\frac{1}{2}'$$

Figurins So Line 10-140-26 - MC

$$E 41^\circ 20' S 41.8$$

$$\text{Sine } 660439 \times 41.8 = 27.61 S \text{ To Temp MC}$$

$$\text{Cor } 750880 \times 41.8 = 31.39 E$$

$$\text{Tang } = 879553 \times 31.39 = 27.61$$

P902

$$Q 73^\circ 30' E 38.0$$

To RT

$$\text{Sine } 958820 \times 38 = 36.44 E$$

$$\text{Cor } 284015 \times 38 = 10.80 S$$

Tang

$$\text{Cat } 296213 \times 36.44 = 10.80 At$$

MCN=15 See Ties P95

$$SP8N 12 E 27 = 17.82$$

Plot this up and find My Temp MC.
RR Spikes should go $1\frac{1}{2}$ ft East for
True MCN=15.
So: At

140-26

~~543844~~

5238.44 589°21'W

2619.22 2619.22
1309.61 1309.61 1309.61 1309.61

3095.60

32.90

3062.70

31.40

1.50

32.90

At 3062.70 west MCN=15 S 27.61

3062.7) 27.61 = L = 09014921

Tang 0°31' = 9018 x 3063 = 27.62 OK

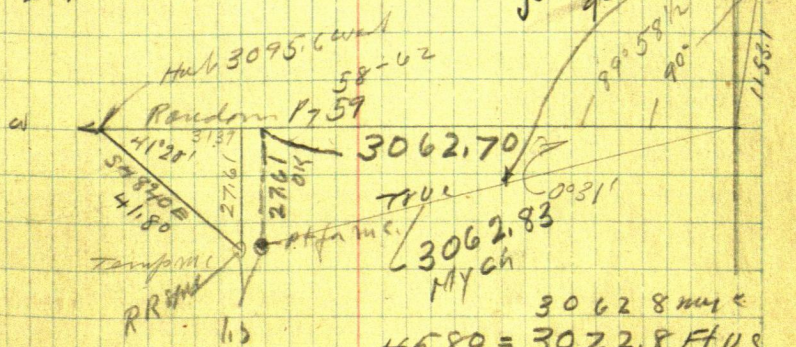
cos = 999959) 3062.7 (-3062.83

3022.8) 40 (= 13232764 x

2640 = 34.93

34.93

2674.93



3062.8 m/s

4580 = 3022.8 Ft US

40.00 Lng

76

$$580 \text{ Lks} - 382.8^{\text{us}} \times 13232764 =$$

$$\begin{array}{r} 5.07 \\ 387.87 \text{ my ch} \end{array}$$

$$\begin{array}{r} 2674.93 \\ 387.87 \\ \hline 3062.80 \end{array} \quad \text{OK}$$

$$\begin{array}{r} 2) 5438.44 \\ 2719.22 \end{array}$$

$$\text{So Line Sec 10} = 4580 \text{ LKS} = 3022.80 \text{ Ft US}$$

$$3022.80 \text{ Ft US} = 3062.80 \text{ My Chain}$$

$$\begin{array}{r} 3022.80^{\text{us}} \\ \hline 40.00 \end{array}$$

$$40. \text{ feet long in } 3022.8 = 1$$

$$3022.8 / 40 = (.013233 \text{ long})$$

78

Correction
 $= .0161906 = 0.561$

Hub MKd = 15

437.74 = 637.74 w gun N 10.33

854.34^W = 1054.34 " N 17.07

1213.94^W is 1413.94 gun N 22.89

1359.42 E 1/16 " N 22.01

1627.94 is 1827.94 gun N 29.60

✓ 1951.84 " 2151.84 " " 34.84 .2.03

✓ 2345.4 = 2545.4 " 41.21 - 1.79

2718.85^W gun N 1/4 44.02 1/4

2818.85 = 3018.81 48.88

2921.00 = 3121.00 50.53

2958.5 = 3158.5 51.14

3092.8 = 3292.8 53.32

3274.3 = 3474.3 56.25

3678.67 = 3878.67 62.80

3733.3 = 3933.3 63.68

3790.8 = 3990.8 64.61

4078.27 W 1/16 66.03

3927.84 = 4127.84 66.83

3950.3 = 4150.3 ~ 67.20

4524 = 4724 76.48

4784 = 4984 80.69

5008 = 5208 84.32

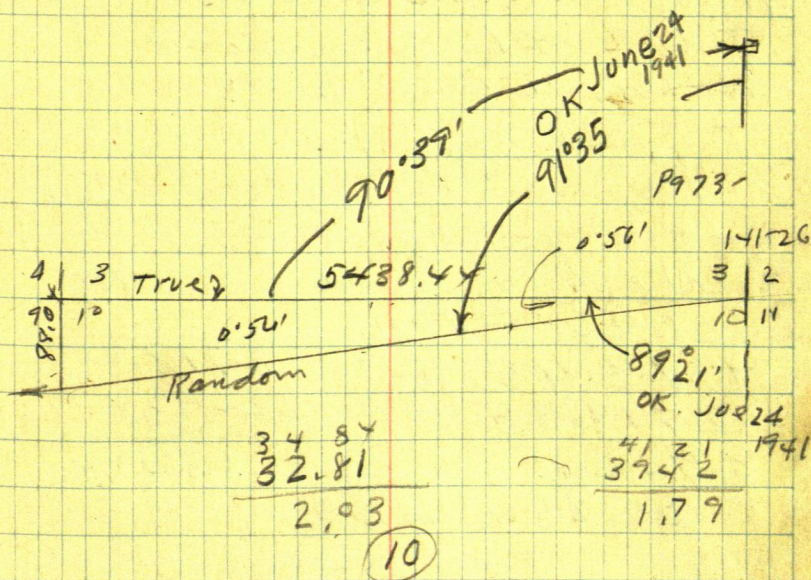
5234 = 5434 87.98

~~141-26~~

79

92. 00

5438.44 gas 14 88.05 T. L. C.



Correction
See Page 54 This book

$$\begin{array}{r} 9095 \\ 56 \\ \hline 9039 \\ 8921 \\ \hline 17960 \end{array}$$

80

Ties to corrected
Hub 2545.4

NP15N 51°22'E 58.58

To 60° dip BM in roof

NP10S 76°59'E 36.85

To spot 5 ft up.

Turned from true line
to 7° E From 2545.4 Ch

West on line line 100

2645.4 Pin

+ 73.45 = 2718.85

2718.85 2645.40

= 1/4 Cor

73.45

60.45 W of Q

Now IM 1/4 Cor

Ties

IX 16 IX 0°32'E 106.55

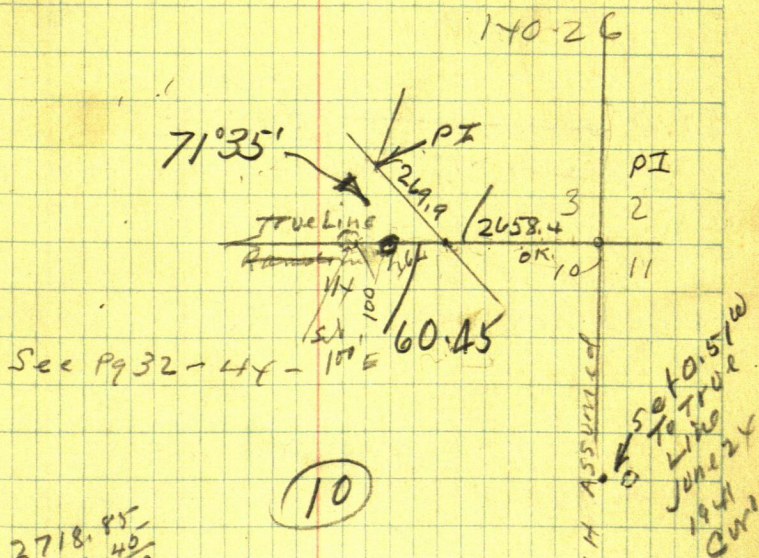
Tam. 9 S 80°0'W 62.4

to spot on base

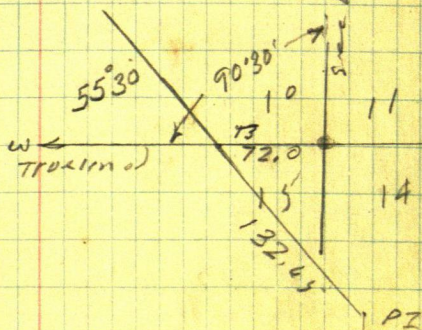
1

Telephoned there line
to CECoulter Jan 12-1948 Pg 88.

June 24-1941

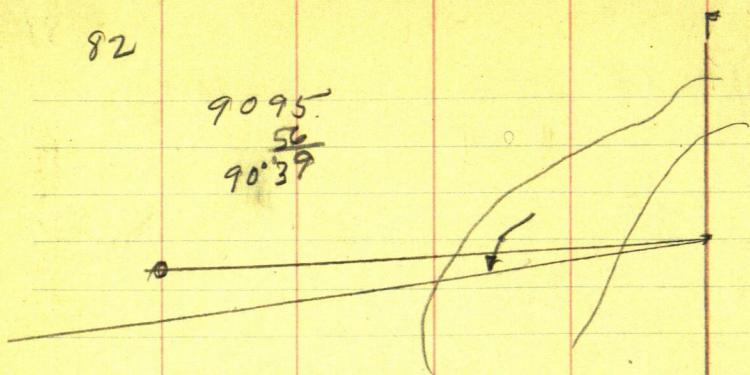


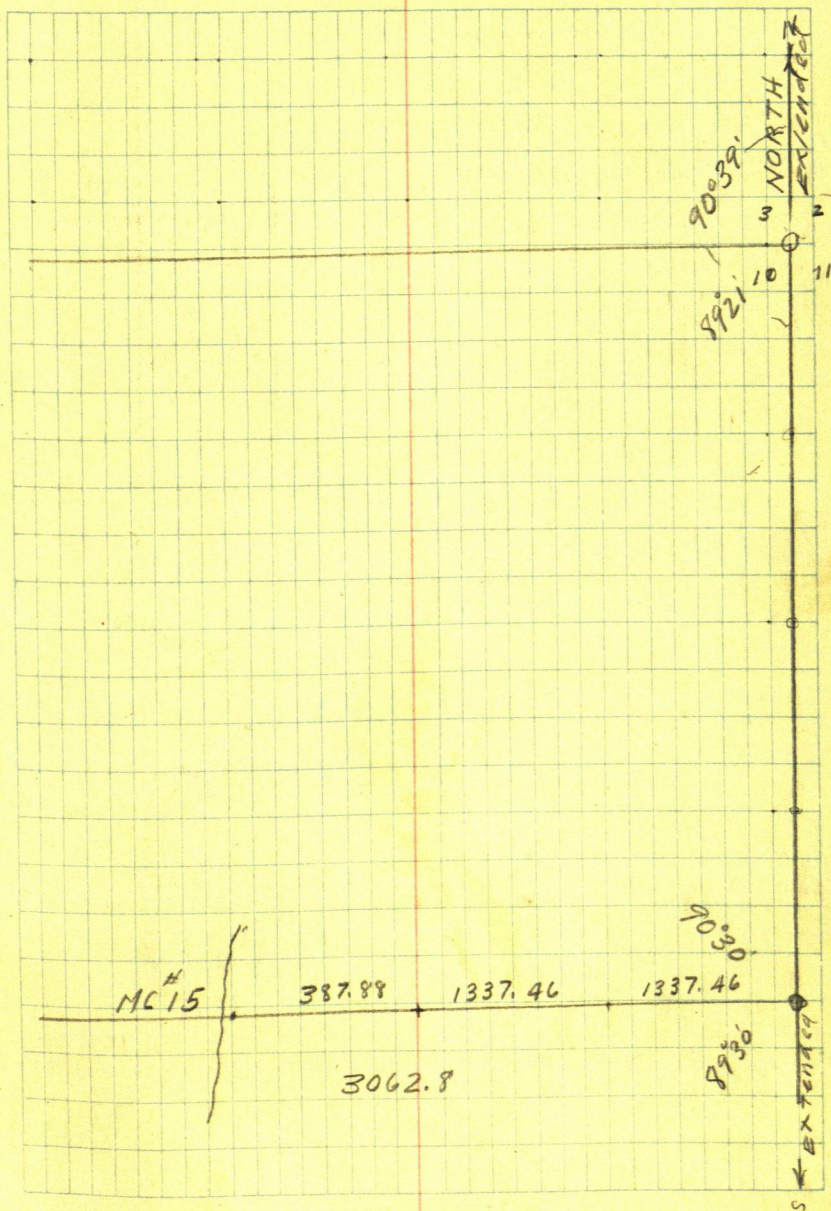
$$\begin{array}{r} 2718.85 \\ 60.40 \\ \hline 2658.40 \end{array}$$



82

9095
56
9039





140-26

5438.44

4 3

9 10

135961

89°21'

EXTENDED

Z

1321.9

2643.80

1321.9

5287.60

180°

10.

1321.9

2643.80

1321.9

90°30'

NG#15

1/4

2674.92

89°30'

EXTENDED

If at 1.80

Nov 11-1942

Figuring about the cost of Survey
See 10-140-26

Jack Curo Engr 150 Hours @ 1.80 - 270.00

Curo Car 15 days @ 250 37.50

Ed Corger Ax 87 @ 50 43.50

Herb Seiffert Ch 88 @ 50 44.00

Larson Engr 10 Hrs

Shall 10.

Brantly 10.

Reid 10.

State
Curo

State Truck 100 miles 25.00

Close \$ 420.00

Pg 19-67-72.

John W. Curo

State Highway Remer.

Jan 17-1948 CECoulter Red Lnd
Surveyor 3439 Garfield Ave So

Mpls Tel Locust 0370 Mpls 5 Min

Called at Et Hovakha

Searched Record Book 'D' for
notes of my survey this

See 10-15-140-26

Staying with Cliff Thomas

Lynch Resort Remer Tel 7F171

Jan 17-1948

Coulter called my office for my

Ties to 1/4 N. Side 10-140-26

I look up my old notes and call

him back See Page 80 This Book

#239. I could not hear well

but it seems my notes check
with what he has

See Pg 80 This Book

April 1-1948

Harold's Birthday

Buy Tube and Gas 7.77 Harold and
his Car and I Lv Welton 11-AM

Dinner at Remer 55-55¢ 110

Drive So to Thunder Lake Channel

Try to get up old Road too

Slippery Park Car on new road

Walk 1/2 mile East to

COR 2-3-10-11-140-20

Find my 2" IM See Cor Ch

West along my old T line

On ice

200 To 300 Swampy shore S. 75'

400 shore S 100' @ 500 shore 75 L

600 pin on ice Lv ice

Shore Swampy runs N 100

then NE by

638 my old latk

Enter green swampy dry. Cedar
spr and hard wood

900 pin ^{Lv set} 909.3 spot old
dead 4" stump 920 Foot

Then up sharp Hill

92

2

West Continued bet 3-4

10

140-26

1200 pin minus 119.5

119.5 = 1080.5 One inch

Iron pipe on top

Set By Coulter last winter

20" WPN 38.5

15" NP S 80°+ E 35.2 New Spots

1200 pin foot but dry

Swamp good timber

1450 enter ice

run S 30° W 30 ft

N 20° E 50 Then NW 300

Thunder Channel

1500 pin on ice

Digging 300 foot 100 ft N

around of point of open
water1800 pin on ice over open
water 20 ft wide &

1650 west

1820 L v ice of Thunder Channel

1800 + 110 =

1910 Foot of hill

2100 pin 2152.7 My old R.R. pt
10" Oak N about 20 E 15

one inch iron pin set last
winter sets West 15.6 and abt
.80 of a foot so

2168.3 small 1" pipe on top

2400 pin minus 85.

85

2315

2315 enter open Bog
NW 50' SE 300

2400 stake in Bog + 100.

2500 pin

2540.6 Red spike set
last winter

See pag 80 for my old
lies

Out about 5-30 pm

90 home to Walker via
Longview Dam near get
stuck in mud 7 or 8 mi.

East of Longview

Home about 2 pm

John W. Curo

Sec 9 Lot 3 - 140-26

$\frac{26}{50}$
7700

75

Ties U.S. Notes 8-9-16-17-140-26

N.P. 14 N 13° E 55' = 36.30

N.P. 14 S 27° W 16' = 10.56

N.P. 14 S 60° W 70' = 46.20

I to X @ 4 = $\frac{1}{4}$ bet 9-16

Birch 10 S 10° E 55' = 3.30

" 8 N 20° W 18' = 11.88

M.C. No 23

N.P. 20 N 52° W 50' = 33.00 ft

M.C. 20

N.P. 20 West 50' = 33 ~~ft~~

M.C. 21

Oak 6 N 35° E 16'

" 6 S 44° W 11'

M.C. 22

N.P. 16 S 4° E 40'

" 12 N 60° E 28'

Tues. July 24 1951

I Lx Walker around noon after taking Johnnie to Dr. drive to Remer then to Thunder Lake store @ store Lx Highway N^o 6 take dirt road stop at Teters store drive on t Ray Woolery's cabin Ray is out fishing his son goes after him. Ray + I go look for his SW^{er} but can't find it take boat go look for corner to 8-9-16-17 can not find it We go to Thunder Lake lodge they have been to the corner but have no time to go now and as they have not been there for sometime they are not sure where it is

after supper We go to Teters store he says he knows where the corner and will come at 7 AM and show it to us.

supper overnite with Ray. sleep in cabin next door. nobody there now

Wed Teter comes shows us corner look over old survey lines. Two surveys 2 different lines and corners

July 25 Wed 1957

at the corner to Sections - 8-9-16-17
140-26 We find a pump point set for
corner on top of high ridge

Over pump point take Ties Needle roads 8°

N.P. 14 N $10^{\circ}13'$ W 16.6

J.P. 18 S $55^{\circ}03'$ W 37.8

Paplar 5 N $53^{\circ}15'$ E 29.60

o. r. 9 S $41^{\circ}05'$ E 29.95

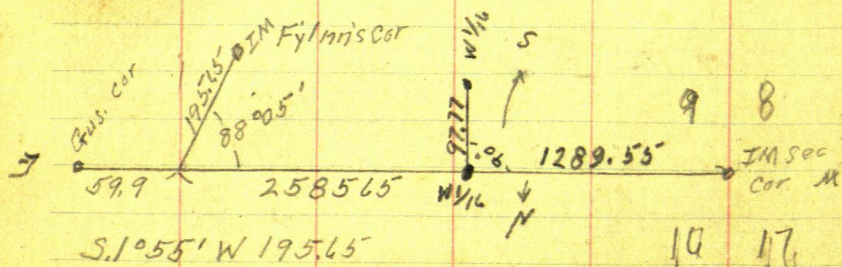
Run E along old cut out random line
Stada over pond @ 694.8 E Hub = 604
spike on top From Hub 694.8 chain East
on old random line $+ 230 = 924.8$ pin
 $+ 170 = 1094.8$ pin $+ 36.9 = 1131.7$ hub
 $1094.8 + 26 = 1120.8 + 251.5 = 1372.3$
hub $- 42 =$ old IM

Thurs. July 26 1951

The car will not start so
about 6:30 we take Ray's car
drive to where road crosses
section line East $\frac{1}{4}$ bet $\frac{1}{4}$ & Lake
walk West to where we left off
yesterday and continue section
line East from Hub 1372.3 chain
East along random line +100 = 1472.3
pin + 300 = 1772.3 + 16.3 = 1788.6 hub +
300 = 2088.6 pin + 6.35 = 2095.45 hub +
300 = 2395.45 pin + 21.5 = 2416.95 nail in
S side 24" cedar tree 6.4 W of hub

2416.95 + 170 = 2586.95 - 1.3 = 2585.65
hub. + 59.9 = 2645.55 hub. @ about
Gys Holstun corner

From hub 2586.95 Fylmris $\frac{1}{4}$ cor sets
S 1.55' W 195.65 ft.



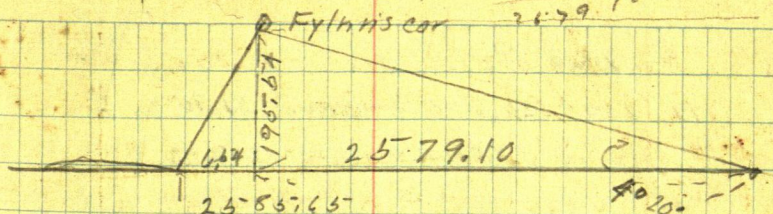
$$\text{Sine } 033446 \times 195.65 = 6.54$$

$$\text{Cosine } 999441 \times 195.65 = 195.54$$

$$\begin{array}{r} 97.77 \text{ } 195.54 \\ 3 \overline{) 195.54} \\ 155 \\ \hline 40.54 \end{array}$$

$$1289.55 -$$

$$2579.10$$



$$195.54 \div 2579.10 = .07581714 - S \text{ for each ft. E} = 4^{\circ} 20'$$

Corrections $4^{\circ} 20'$

.07581714 - S for each ft East

Hub 694.8 E goes S 52.68

" 1131.7 E " 85.80

" 1372.3 E " 104.04

" 1788.6 E " 135.61

" 2095.45 E " 158.87

" 2423.35 E " 183.73

" 2579.1 E " 195.54 OK

@ 1289.55 E " 3.97.77 to W $\frac{1}{4}$ bet 9-16

π over Fylmns corner

Take ties

N.P. 30 N 36° E 29.3

NP 20 S $81^{\circ} 30'$ W 17.06

From this $\frac{1}{4}$ corner run
North 90' to Fylmns South line
Rain hard. go in

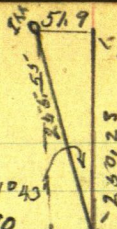
11°43'

$$\text{Sine } 203072 \times 263.55 = 51.90$$

$$\text{Cosine } 979164 \times 253.53 = 250.23$$

$$\begin{array}{r} 250.23 \\ 1338.85 \\ \hline 1586.08 \\ 1584.08 \end{array}$$

11°43'



North Range

1586.08

N 1°53' W

1393.86

90°

IN 4

IN 11

Random

2579.10

2586.5

4°20' Flynn's line

$$\text{Sine } 075559$$

$$\text{Cosine } 997141$$

$$2579.1 \div 997141 = 2586.50$$

$$2579.1 \times 997141 =$$

Correction East line

$$51.9 \div 1586.08 = -0.32722182 / 0.53'$$

h46

1°53'

$$\text{Sine } 032864$$

$$\text{Cosine } 999460$$

$$\text{Tang } 032882$$

1333.85

250.23

1584.08

1586.04
1269.85

317.23

101

From $\frac{1}{4}$ S. side Section 9-140-20

Chain North. on random -

@ 194.8 hub in random

@ 420 - 3.6 = 416.4 hub + 301.2 =

717.6 hub @ 858.85 hub + 80 = 938.85 ^{mm}

+ 270 = 1208.85 + 60 = 1268.85 hub + 65 =

1333.85 spike in N wheel tract of road

Above 1333.85 I Mon lake shore
on N & S sec. 9 bears $11^{\circ}43'$ Left or
N $11^{\circ}43'$ W 255.55

Note We are trying to use Flynn's old
survey, so as to not change plat of Lot 2
So correct our line over

Correction .032722182 W for each ft N

hub 194.8 N goes W 6.37 ft

" 416.4 N " W 13.63

" 717.6 N " W 23.48

" 858.85 N " W 28.10

" 1268.85 N " W 41.72

" 1333.85 N " W 43.75

From hub 1333.85' we run
 N $63^{\circ}42'W$ 319.8 to spike on Lake
 shore 5 ft E of water

Then over 319.8 BS. S $63^{\circ}42'E$ and
 run lake shore - Stada reading on flog pole
 N $26^{\circ}45'E$ 110 ft
 N $19^{\circ}35'W$ 80 ft
 π -

S $8^{\circ}10'E$ 100 ft
 S $1^{\circ}15'E$ 140 ft
 S $16^{\circ}47'W$ 220 ft
 S $18^{\circ}20'W$ 280 ft
 S $26^{\circ}10'W$ 360 ft
 S $33^{\circ}35'W$ 500 ft
 S $41^{\circ}30'W$ 540 "
 S $49^{\circ}20'W$ 540 "
 S $62^{\circ}W$ 520 "
 S $72^{\circ}W$ 545 "
 S $83^{\circ}45'W$ 590

N $85^{\circ}45'W$ 610 ft
 N $80^{\circ}40'W$ 640 ft
 N $77^{\circ}25'W$ 700 "
 N $75^{\circ}45'W$ 650-750

as far as we can
 go from this setup.

July 27-1951

We go to W $\frac{1}{4}$ S. side Sec. 9
 We go to hub 1372.3 E of SW Cor
 Sec 9, on random chain W
 82.75 to pt 1289.55 E and run
 South 90° to Random 97.77 and
 set pt for W $\frac{1}{4}$ cor. with following
 Ties To W $\frac{1}{4}$ Cor bet Sec 9-16:
 140-26 Vig.

N.P. 14 N $65^{\circ}20'E$ 4.39N.P. 14 S $79^{\circ}50'W$ 53.95

From W $\frac{1}{4}$ run N $1^{\circ}53'W$ parallel
 to N & S E of sec 9. cut line + hub
 do not chain

cuts his leg, goes home

Sat July 28-1951

Continue W $\frac{1}{16}$ line N to lake

N @ 139.6 pin + 234.4 = 374.0 N hub

139.6 + 240 = 379.6 pin + 300 = 679.6 stake

+ 74 = 753.6 hub + 150 = 903.6 pin +

120 = 1023.6 pin enter swamp 1173 L & keep.

1203.6 pin + 50.1 = 1253.7 hub + 151.9 =

1405.6 hub + 280 = 1685.6 + 5.9 = 1691.5

hub pt for M.R. I M W $\frac{1}{16}$ Cor.

Ties .

Cedar 9 S 38°30' E 21.9

.. 10 S 32°35' W 19.27

1691.5 + 36. = 1727.5 hub 60' up
at edge of water

Turn 1727.5 D.S. S 1°53' E and run
shore line stada

S 66°15' E 75

S 76°40' E 190

S 80°10' E 340

S 78°46' E 350 to pt where we left
off. yesterday taking stada from over lake

PM

Tower hub 319.8 BS S $63^{\circ}42'E$ on hub
in road - cor to lot 1 bears S $12^{\circ}10'E$
32.9 to IM

Cor lot 2 bears S $1^{\circ}35'W$
From lot 1 cor to cor lot 2 = 127.5 ft.

Tower hub on hill 1268.85
I.M. Lot Cor bears S $86^{\circ}58'W$ 27.2
chain S on old line 41.9 to I.M.

Tower 1333.85 in road turn road
N side -

- | | | | |
|-------|------------------------|--------|------------------------|
| Sta ① | N. $87^{\circ}43'W$ | 65. ft | to 2 |
| " 2 | S. $63^{\circ}26'W$ | 134. | to 3 |
| " 3 | S $42^{\circ}22'W$ | 205.9 | to 4 |
| " 4 | S $32^{\circ}39'W$ | 176.4 | to 5 @ 150 across road |
| " 5 | S $81^{\circ}46'W$ | 80 | side - to 6 |
| " 6 | N $51^{\circ}11'W$ | 101.8 | to 7 |
| " 7 | N $67^{\circ}27'W$ | 178.8 | to 8 |
| " 8 | N $4^{\circ}07'E$ | 122.7 | N side road to 9 |
| " 9 | N $43^{\circ}28'W$ | 179.5 | S. to 10 45°W |
| 10 | run S $46^{\circ}55'E$ | 121.1 | to IM run S to IM |
| 10 | " N $19^{\circ}51'W$ | 212.6 | to 11 |
| 11 | " N $57^{\circ}11'W$ | 165.9 | to 12 |

N 79° 19' W 107.9.
Should, run about S 25° E
from 11

Aug 11th Sat, 1967

I Lr Walker drive to Lot 3 Sec 9
140-24 South side Thunder Lake
where I met Einar. Ray and Vern
Tower hub 1333.85 on Random Site S
on random Turn 90° R and run 43.75 ft
at right angle on true line

Tower angle point line site N1°53'W
on IMon Lake shore NE cor ~~Point~~ lot 3
chain S 1°53'E @ 225 Einar's SE cor
at 260 at right angle for Einar's New SE cor
continue S 1°53'E @ 349.8 at right angle
point

Tower A.P. site N1°53'W and run N. S 45° W
@ 35 ft and 60 ft up in birch stump

Carl's new corner on S.W. cor lot 2
+ 190 = S.W. cor lot 3, + 225 = S.W. cor lot
4 + 130 = A.P. Street

Tower angle point BS N 45° E and run
West @ 95 lot cor + SE cor Street then 35 ft
across street then 150 to angle point road

T still @ S.W. cor Street run N along
W side of str. to lake set out for IM

Tower A.P. site E and run

N 45° W @ 160 lot cor + 200 lot cor

+150 lot cor quit for night

Aug 12 - 1951 Sunday

Same crew beg @ 150 lot cor SW cor lot 8
continue N Eerty side of Street @ 100
set spike for lot cor + 100 spike for lot cor +
75 Lot cor + 76. intersect West line
of Gov't lot 3 - Section 9.

$1405.6 + 28.9 = 1434.5$ ft N of SW cor
Gov't Lot 3.

from IM NW cor Gov't lot 3 - 36 ft S of
water's edge chain Easterly 150 ft set
spike 15 ft S of water for lot cor - chain 130
set spike 25 ft from water lot cor chain
SEerty 160 ft set lot cor 25 ft from water
chain SE. about 160 ft set spike 10 ft from
water for lot cor. continue SE 160 ft
set spike for lot cor 10 ft from water chain
SEerty 154.9 to lot cor on W side of Street.
20 ft from water

Turn 154.9 site S along W. side Street
219.4 ft N of Thunder Lake drive
Turn 90° chain E 35 ft set spike for lot
cor 30 ft S of water chain NE 125 Lot cor
5 ft from water. + 125 Lot cor 4 ft from water
+ 120 set lot cor. 5 ft from water and 4.9
S of old lot cor. drive IM at all points
back to Walker every on to show I want to set
down town

Sec. 10 - 140-26 Lot 3

Fri 11-1952

Received Telephone Call from
Remer. Mr. Lynch Lot 3 - Sec 10
140-26 wants his line I tell him
I will be over Sunday July 13-1952
around 10 A.M.

Sunday 13-1952

Edward Curo & I drive to Big
Thunder Lake stop at Remer for
malted milk at Simkys arrive at
Leach Resort on Big Thunder around
10 - Mr. Lynch Calls Lawyer in Remer
who comes out we look over the land
Leach wants to know about what it will
cost to get his south line I tell him
about \$150⁰⁰ he says go ahead that
he will be back up here next Sat. and
will give me \$75⁰⁰ then and the rest
within two months.

July 17-1952

get gas. Ed & I & Walker drive
to Sec 10-140-26 at the SE cor
Sec 10 being the corner to Sec.
10-11-14-15. We find the I.M. lying
along the side of the road pulled out
by road grader.

From Ties to this corner marked by
John W. Curo is his survey of Sec 10
for the State Highway Notes in this
book also Recorded in Co. Record book of
Surveys.

Ties to 10-11-14-15

NP 12 N 40° 19' W 91.90

2x 36' I.M. N 45° E 46.69

W. Oak 12 S 15° 04' E 152.65

N.P. 15 S 7° 14' W. 332.65

we find all 4 ties and from the
NE & NW Ties we chain in and set a
60" spike for true Sec. cor.

have to quit on account of rain

July 18-1952

Ed & I get gas drive to SE cor Sec
10-140-26

From 60° spike set for cor we
chain N along the $\frac{1}{2}$ of old Co. road
@ 300 pin 600 pin 900- pin 1200 pin 1500 pin
1800-2100-24-27 @ 2642.9 $\frac{1}{2}$ road East
the T M $\frac{1}{4}$ has been pulled up by road
grader from 2642.9 N we continued
N 900 ft. I walk N through the woods
trying to follow old random line
brush heavy I find old 60° spike hub
on hill. Walk back check over old notes
pg. 15 to 18 this book

Walk S from $\frac{1}{4}$ cor 750 ft + and
find B.T. to hub. 1891.1 N
page 17 this book says

POT RR spike Hub. $\frac{1}{2}$ N & S road

Tie to random hub. 26 W of line

Twine Oak 3-4 joined + base 8' N 53° 20' E 38.4

Br. Oak 9 N 55° 30' W 45.82 spot at base

Note: I am to change ties to corrected
hub which sits on 26 E of tied random hub
J.W.C.

From these trees I set a 60°
spike by flat chain then set my
spike 0.26 of a foot E to true line

Back to South to top of hill
work it on line but this but just
set for line and the SE corner
of Sec 10-140-26 Then extend
the Sec line South of the SE Cor
of Sec 10. 312.8 feet at a 68° spike
Sta 1-

Town 1 BS Non Sec line called N 1st run N 28° 44' W
1112.1 ft to Sta 2

Town 2. BS S 28° 44' E run N 35° 03' W
1800 ft to Sta 3

North 28° 01' W 568.20 to 4

```

.010763
.010472
1021235
0106173-
010763
213805
010690

```

```

999942
45
97
435-
42
1855
43

```


Sta 0 = Corner run South 312.8 to Sta 1

Sta 1 is South 312.8

run N $28^{\circ}44'W$ 1112.1

Sine $480734 \times 1112.1 = 534.62 W$

Cosine $876867 \times 1112.1 = 975.16 N$

Tang. 548240

Sta 2 is West 534.62 North 662.36

run. N $35^{\circ}03'W$ 1800

Sine $574291 \times 1800 = 1033.72 W$

Cosine $818651 \times 1800 = 1473.57 N$

Tang. 701509

Sta 3 is West 1568.34 North 2135.93

run. N $28^{\circ}01'W$ 568.2

Sine $469728 \times 568.2 = 266.90 W$

Cosine $882811 \times 568.2 = 501.61 N$

Tang 532083

Sta 4 is West 1835.24 North 2637.54

N $15^{\circ}47'W$ 1268.9

Sine $272000 \times 1268.9 = 345.14 W$

Cosine $962297 \times 1268.9 = 1221.06 N$

Tang 282657

Sec 10 - 140-26

S 89° 21' W

89° 21'

S 89° 23 1/4' W

1321.9'

S 89° 25 1/2' W

2643.8'

3945.70

410 N

90° 30'

S 89° 30' W

S 89° 23' W

Sine 010763

Cosine 999942

Tang. 010763

S 89° 24' W

Sine 010472

Cosine 999945

Tang. 010472

89° 23 1/4

Sine 010690 X 2180.38 = 23.31

Cosine 999943 X 2180.38

Sat. July 19 1952

Don + I Lv Walker gas 185-
drive to Remer get coffee + rolls
drive to Section 10-140-26
N. side Thunder Lake

Turn Sta 4 B.S. S $28^{\circ}01'E$ on
Sta 3 and run N $15^{\circ}47'W$
1268.9 Sta 5

3963.7

2331

3942.39

3942.39

3858.6

83.79

Sta 5 is 2180.38 W and
3858.60 N from SE Cor Sec 10
140-26

Sta 5 is 2180.38 ft S $89^{\circ}23\frac{1}{4}'$
W of N $\frac{1}{16}$ Cor between Sec 10 + 11
Turn Sta 5 on N $\frac{1}{16}$ line - 2180.38
ft W of sec. line - run W on N $\frac{1}{16}$
line $204.2 = 2384.38$ W set $2 \times 30^{\circ}$
IM to mark S line of Govt Lot 3 Sec 10
+ 118.12 = 2502.5 W set $2 \times 30^{\circ}$ AM
on bank + 80.7 = 2583.2 W set

2X30" IM on sea wall 20 ft
from water of Thunder Lake

Lynch does not come
up from city we finish
and go home rain

4 days @ \$40 = \$160⁰⁰

See Book 232 page 140

US Notes 140-26

466
-2
462

22
66 119
-22
132
-132
145

1/4 E side Sec 27-140-26

W Oak 8 S 34 E 7 = 4.42

W " 8 S 12 W 22 = 14.52

Dean Anderson say he found
Orig. Oak at 1/4 E side 27

Gravel pit

Willis Copeman

Elmer Vollrath

Elmer Vollrath

Deed

Judgment in the matter of Vollrath

vs E K Knights - White

that part of the NE 1/4 of the SE 1/4

Beg. 1833 ft N of SE cor of Sec 27

140-26 thence W to the shore of big

Bass lake thence SE by 130 feet along

said shore to a point 80 ft due South

of the N line of said parcel thence

E parallel with said N line to the E

line of said Sec 27 thence N 80 ft

to pt of beg.

Volcrath N Mis pg, 262
 Doble 50 N. pg. 340

That part of the NE $\frac{1}{4}$ of the
 SE $\frac{1}{4}$ and Lot 4 & 5 all in Sec.
 27-140-26 described as follows
 Beg. at a point on the E line
 of said Sec. 1833 feet N of the
 SE cor of said Sec. thence
 S $89^{\circ}30'$ W a distance of 3068
 feet to the easterly shore of Big
 Bass Lake; thence Southeasterly
 along the shore of said lake a
 distance of 130 feet to a point
 on said lake shore 80 feet South
 of the North boundary line of the
 land herein conveyed; thence
 East parallel to said N boundary
 line a distance of 2956 feet to
 the east line of said Section
 thence N along said east line
 of said Sec. a distance of 80 feet
 to the place of beginning contain
 $5\frac{1}{2}$ acres \pm

That the defendants, nor any of
 them have no right title or interest in
 or to said property. The plaintiffs
 recover their costs & disbursements herein
 Dated Oct 6th 1930

By the Court
 A. K. McPherson clerk

Tue Aug 26 - 1952

Elmer Vollrath	55 D - pg. 271
Regal Frank W	68 D " 330
Willis Capeman	101 D " 360

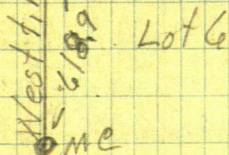
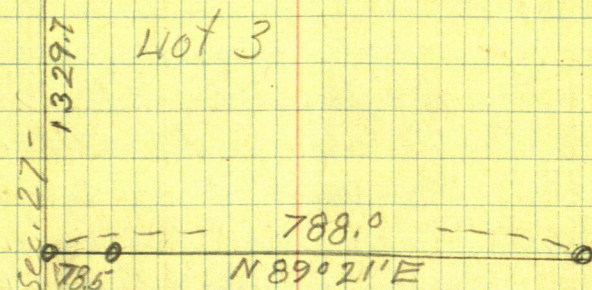
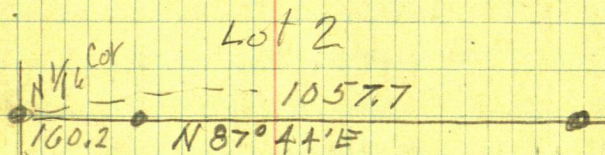
Willis Capeman & Alta H

Filed Nov. 2 1948

S 4 rods of Gov Lot 5 & S 4 rods
of NE $\frac{1}{4}$ of SE $\frac{1}{4}$ Sec. 27-140-26

Jan. 13-1953

I Lu Walker @ noon drive to Walt's Resort
on Big Bass Lake in Sec. 27-140-29



Feb. 4, 1953 I copy this,
 State of Minnesota In District Court
 County of Cass _____ 15th Judicial Dist.

Lillian A. Danielson Gifford
 Plaintiff

vs.
 Alta B. Vore + Glenn Vore
 Defendants

Finding of Fact and Conclusion of Law

The above entitled matter came on for hearing before the above named court at the regular Sept. 1952 term of said court on the 9th day of Sept. 1952. The plaintiff appeared in person with her Attorney Edward L. Rogers Esq., the defendants not appearing and both being in default.

Plaintiff filed herein her affidavit of No Answer, after which the following proceedings were had.

First, as findings of Fact
 The Summons and Complaint were personally served upon each of the defendants herein on the 11th day of Aug. 1952. that more

than twenty (20) days have elapsed since the service of said summons and complaint and that No answer or demurrer, or copy of either has been received by the plaintiff's attorney herein, nor have the defendants appeared herein in any manner whatsoever and that all of said defendants are wholly in default herein.

That the plaintiff and her father have been the owners and in possession for more than twenty-five years of the following described property situated in Cass Co. Minn. to-wit:

That part of Lot four (4) and five (5) and of the Northeast quarter of the Southeast quarter $NE\frac{1}{4}$ of $SE\frac{1}{4}$ Section 27 - Twp 140 Rge 26 described as follows.

Beginning at a point on the Easterly line of Sec. 27

740 feet North of NE corner of Lot 9 in said sec. Thence North along said section line 250 feet. Thence west on a line parallel with the North line of said Lot 9 to the shore of Big Bass Lake.

Thence Southerly along the shore of said lake to a point 250 feet South of the last described line. Thence East on a line Parallel with the North line of said Lot 9 to point of beginning except roads. Subject to mineral reservations

That on the 1st day of June 1952. defendants wrongfully and without authority went upon the above described premises and cut therefrom and destroyed 200 small white and Norway pine trees averaging three feet in height, that in addition thereto defendants cut and destroyed

on plaintiffs premises other
brush and timber and cutting
off and destroying the privacy
of plaintiffs premises

That the damage caused to
the premises by the cutting and
destroying of said trees and brush
is in the sum of \$2500.00

Second, as Conclusion of law
That the plaintiff is entitled to
Judgment against the defendants
and each of them in the sum of
\$2500.00 with interest thereon
from the 1st day of June 1952

Let Judgment be entered
Accordingly

Dated Sept 10, 1952

D. H. Fullerton, Judge

Description

beginning at a point on E line
Dec. 27

740 ft N of (S $\frac{1}{16}$) - N E cor lot 9
thence N 230 feet!

.. W parallel to N line of lot
9 to lake shore = S $\frac{1}{16}$ line

Thence southerly along Lake shore
to point 230 ft South of North
line

Thence East parallel with (S $\frac{1}{16}$)
to place of beginning.

Feb 4-1953

I copy description I got from
Ed. Rogers Co. Attorney,

Elworth Miller comes from
Grand Rapids, has to go into the
army the 15th of Feb. 1953

Feb. 5th 1953

I Lv Walker in my car about 9-30 AM. drive to Walts Resort in Section 27 140-26 on Big Bass Lake where I find Walt. Mortenson waiting for me

Lv car at Walts Resort lake outfit and Walk to Lillian A. Danielson Gifford's cabin. Walt shows me 2" I.M. by the boathouse and says that it is the SW cor of Danielson Gifford Tract we go North and Walt shows m a short line of stone which he says was the North line of Danielson Gifford Tract no sign of I.M. along lake shore. We go East and set X on line with the short line of stone which mark the N. line as close as we can. about 150' from lake shore.

site West along line of stone and run calling this E & W. we run. S $18^{\circ}01'E$ 159.1 ft to Sta 1.

I.M. SW Cor of tract by the boat house bears S $43^{\circ}46'W$ 128.5 feet From Sta 1

from Sta 1. run S $43^{\circ}21'E$ 187.6 to Sta 2

From Sta 2 run $N 84^{\circ} 27' E$ 151.2 ft
to Sta 3 go for coffee

from Sta 3 run $S 74^{\circ} 06' E$ 229.9 to
Sta 4.

from Sta 4 run $S 27^{\circ} 56' E$ 159.85 to Sta
5

from Sta 5 run $S 35^{\circ} 45' E$ 193.3 to
Sta 6.

from Sta 6 run $S 52^{\circ} 24' E$ 389.1 ft to
Sta 7

from Sta 7 run $S 76^{\circ} 43' E$ 183.1 to Sta 8
in the yard at Walts Resort

from Sta 8 run $N 84^{\circ} 06' E$ along Walts
road 797.6 ft to Sta 9 just E of ~~of~~
where Walts road turns North

from Sta 9 run $N 71^{\circ} 33' E$ 1348.4
feet across open meadow to a 60" ^{al}
spike in West edge of tar road being
Highway No 6 quit for night.

Walt can not help me tomorrow but
will Sat. the 7th day of Feb 1953 if
the weather is fair.

I drive back to Walker Minn.
arrive late

Feb. 6 - 1953

All day in the Office copying
plats.

Feb 7. 1953

Elsworth Miller and I Lu Walker in my car drive to Walts Resort in Section 27-140-26 on Big Bass Lake. Walt has some work to do and as Elsworth Miller is with me he wants to do his work and let Elsworth help me.

from S E cor of section 27 140-26 being an iron in the Tar road, we run a random line North @ $1677.65'$ intersect our travel line from the West

@ $2614.5'$ hub. = $60'$ spike the stake set by Dean Anderson for the true $\frac{1}{4}$ corner on the E side of Sec. 27-140-24 bears $N 62^{\circ}34' W$ 74.9 feet

Then Sta 10 BS Weston Sta 9 and set a $60'$ spike at string intersection of this line and our random line N from Sta 10 run. $N 71^{\circ}33' E$ 6.5 feet to hub at intersection of our N & S random lines $1677.65'$ ft N of S E Cor, SF 9 to Sta 10 = $1348.4 + 6.5 = 1354.9$ to intersection hub
Then intersection hub BS S $71^{\circ}33' W$

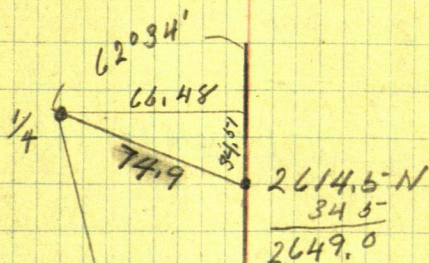
and our NTS random line bears $N 3^{\circ} 08' W$

Fig. correction of NTS Random
E side Sec 27.

$N 62^{\circ} 34' W$ 74.9 =

Sine $887548 \times 74.9 = 66.48$

Cosine $460716 \times 74.9 = 34.51$



$$\begin{array}{r} .025096262 \\ 2649 \overline{) 66.48} \end{array}$$

Correction =

$.025096262$ OK
 $= 1^{\circ} 26' 2$ on West

$1^{\circ} 26'$

Sine 025014

Cosine 999687

into 2649.0

line
2649.83
True

$1^{\circ} 26'$

SE Cor
Sec 27

Correction of E line Rec. 27

$$.025096262 = 1^{\circ}26'$$

1324.5 N goes W 33.24 to S $\frac{1}{4}$ Cor

1677.65 N " W 42.10 to Sec. line

2614.5 N " W 65.61 to " "

@ 2649 N $\frac{1}{4}$ Cor sets W 66.48 ft

6648

4210

2438

2648⁸₉₁₀

1677.65

971.35

$$.02510684 = 1^{\circ}26'$$

$$971.35 - 24.38.00$$

$$71^{\circ}33' \neq N + 3^{\circ}08' = 74^{\circ}41' + 1^{\circ}26' = 76^{\circ}04'$$

$$2649 \div 2 = 1324.5 = S \frac{1}{4}$$

$$740' N = 1324.5 + 740 = 2064.5 N$$

pt of leg. SE Cor

$$2646.5 + 250 = 2314.5 ft N = NE Cor$$

Fig

point on lake shore in line with rock
 Wall = 00 N - Sta 0 = N 00 + E 00 for fig
 From Sta 0 run S $18^{\circ}01'E$ 159.1 to sta 1 -
 sine $309294 \times 159.1 =$
 cosine $950967 \times 159.1 =$

From Sta 1 run S $43^{\circ}46'W$ 128.5 to INSWE
 sine 691723
 cosine 722163

From Sta 1 run S $43^{\circ}21'E$ 187.6 to sta 2
 sine 686453
 cosine 727174

From Sta 2 run N $84^{\circ}27'E$ 157.2 to sta 3
 sine 995312
 cosine 096714

From Sta 3 run S $74^{\circ}06'E$ 229.9 to sta 4
 sine 961741
 cosine 273959

From Sta 4 run S $27^{\circ}56'E$ 159.85 to sta 5
 sine 468444
 cosine 883493

From Sta 5 run $S 35^{\circ} 45' E$ 193.3 to Sta 6

Sine 584250

Cosine 811574

From Sta 6 run $S 52^{\circ} 24' E$ 389.1 to Sta 7

Sine 792290

Cosine 610145

From Sta 7 run $S 76^{\circ} 43' E$ 183.1 to Sta 8

Sine 973246

Cosine 229767

From Sta 8 run $N 84^{\circ} 06' E$ 797.6 to Sta 9

Sine 994703

Cosine 102793

From Sta 9 run $N 71^{\circ} 33' E$ $1348.4 + 6.5 =$

1354.9 intersection with N+S random line Sta 11

Sine 948600

Cosine 316477

From Sta 11 run $N 3^{\circ} 08' W$

Sine 054660

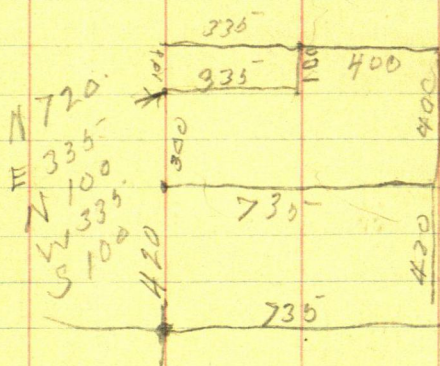
Cosine 998505

Sta 11 = intersection of Travis line
 with random sec line and is
 158.79 ft S and 3342.2 ft E of I.M.
 SW cor of Tract as the SE cor
 of said tract is N + W of Sta 11
 and sets 223.52 ft N and 3269.53 ft
 West of I.M. as run. The true
 course of the south line of the
 250 foot tract is as follows

$$223.52 \div 3269.53 = 0.6836456 = 3^{\circ}33'$$

S

138

Teter Lot 2 Section 16
140-26

Theo M. & Mae H. Klement to
Elmer T. & Zelda Sportz

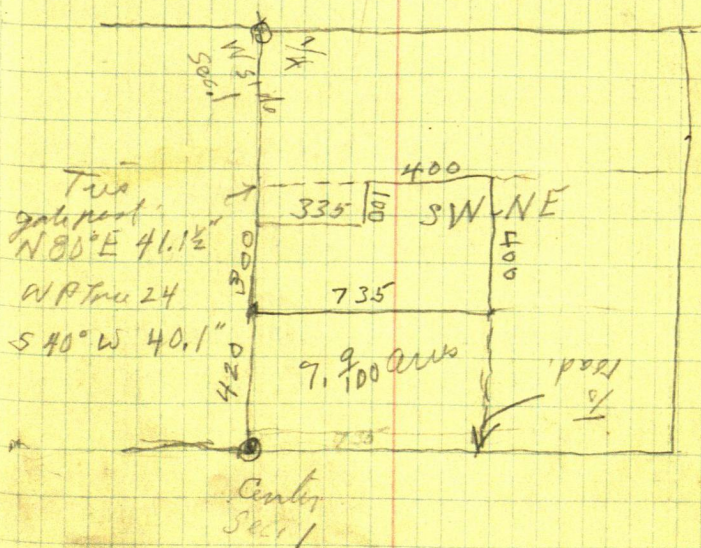
139

Remer School 1958

Sec 1-141-26 E $\frac{1}{2}$ of NE $\frac{1}{4}$
except road & school

SW $\frac{1}{4}$ of NE $\frac{1}{4}$ Sec 1-141-26
described as follows

commencing at a point 420 ft North
of the SW corner of the SW $\frac{1}{4}$ of NE $\frac{1}{4}$
thence running East 735 ft thence
North 400 ft thence W 400 ft thence
South 100 ft thence west 335 ft thence
South 300 to pt of beg.



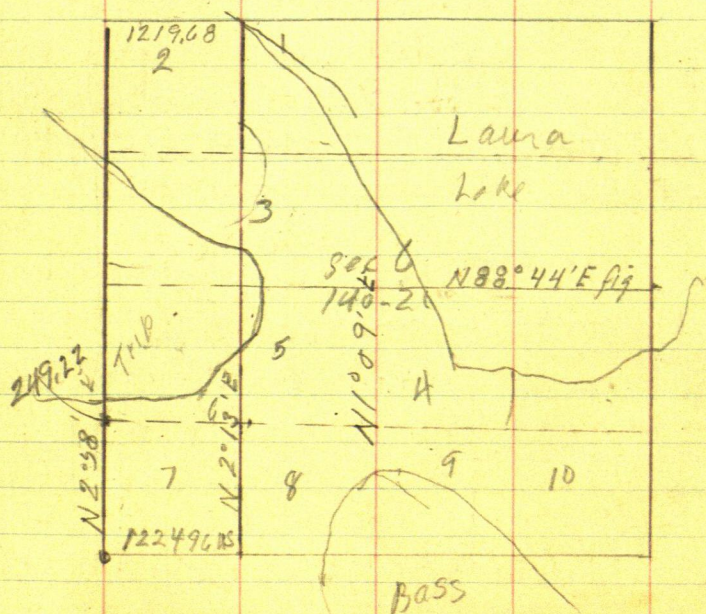
Elliott & Waterhouse

Lots 6-7- Sec 6-140-26

Waterhouse is getting Gov't Lot 7
and that part of Gov't Lot 6 as follows:
from NE cor of lot 6 where same
intersects the shore of Upper Trilipic
Lake S waly along said shore 700 ft
thence S. to a point on the S line of
said lot 6 a distance of 400 ft W of
SE cor of said lot 6 thence E to SE
cor lot 6 thence N to place of beg.

Monday May 23-1960 - G

Gertrude & I drive to Elliotts on
Trilipic Lake and look over the ground



Trip to SW corner 6-140-26

- Nail disk in 3" Maple SW ± 97.4
- SW - nail in disk 18" NP 102.0
- SE \pm " " " 10" Maple 94.0

July 7th 1960

John - Bob & I to SW corner 6-140-26
we find the 3" Maple with disk also the
10" Maple with disk the 18" NP is gone
from these two trees we chain downhill
plumb bob chain several times before
we establish point for SW corner said sec 6
We go North find IM on Lake shore
also the one that sets 400 ft South
as this line is hilly we set T on top
of bank site Non IM, MC and run S
at 207.75' old nail in ground by a 2x1x14"
wood stake. Tower and nail BS Non \pm to
on brink IM. 400 S bears L on E 3°26'
from hub on brink chain N 43° to IM MC 2x
Sol water 43 + 164.75 = 207.75

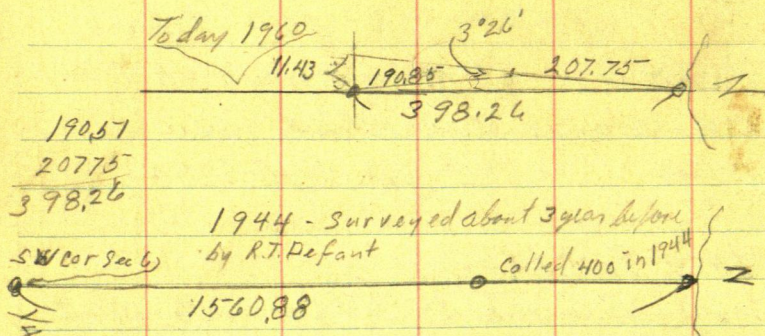
Tower 207.75 IM bears L 3°26' - 150 + 40.85 =
190.85

3°26' - 190.85

Sta 059887 x 190.85 = 11.43

* Cassin 998205 x 190.85 = 190.51

Trilipe Lake



US Measurement from 1/4 North to Lake

2380 LKs = 1570.80 US - Defant's & SW Cor

fig show 1560.88

9.92 short

1570.80 / 9.92, 0.0063152933

1320 x 0.0063152933 = 8.34

1560.88

1317.66

249.22

207.75

41.47

1320.00

8.34

1311.66

Correction's

398.26 / 11.43 L 0.02869984 E for each pt ^{1038'}

hub 4310'S goes E 1.23

hub 207.75'S " E 5.96

170
130

170
180
250.

143

July 8th 1960

John - Bob + I to Sec 6 - 140-26 - SW Cor
Tower hub over line of hubs set on Sec
line run South from IM on Lake shore
thru IM 400 ft to N edge of R & W Cor road
Tower hub. N edge of R & W Site Hand
run S miss pt for Cor 0.45 W of pt for cor.
We go to W $\frac{1}{4}$ S side Sec 6 work T
on line bet W $\frac{1}{4}$ + Sec 1 Cor find old
1X2-wood hub which is 0.4 N of line
Tower SW Cor Sec 6 take NE angle
of W line & S line said Sec 6 reads
87°02'

Tower pt for S $\frac{1}{4}$ Cor W side Sec 6
Site N section Turn L 87°02' + run
E on Random S $\frac{1}{4}$ line Sec 6
at 75 cross old trail at 101.5 hub + 126.75
at 228.25 hub + 245 ~ 473.25 hub +
100.1 = 573.35 hub in E old road (travelled)

Tower 573.35 BS S 87°02' W run
N 24°31'E 145.4 Tower 145.4 BS S 24°31' W run
N 58°40'E 215.65 Tower 215.65 BS S 58°40' W run
N 75°20'E 271.7 Tower 271.7 BS S 75°20' W run
spike 2 ft from fence cor. in line with fence
bears N 62°46'E 130 ft.

N 144

280
150
130
141.6

149.5

Still at 271.7 run N $29^{\circ}57'E$ 271.5
run N $11^{\circ}12'E$ 349.36

Turn 349.35 B S S $11^{\circ}12'W$ run
2" IM bears S $62^{\circ}42'W$ 23.5

Still at 349.35 run N $88^{\circ}20'E$ 144.25

Turn 144.25 B S S $88^{\circ}20'W$

IM $\frac{1}{4}$ cor sets S $87^{\circ}06'E$ 153.5

Greenes old Notes say E line sec. 6 runs N
I find the W line runs N $20^{\circ}38'E$ the N & S
should run N $1^{\circ}29'$ the W & E line N $20^{\circ}13'E$

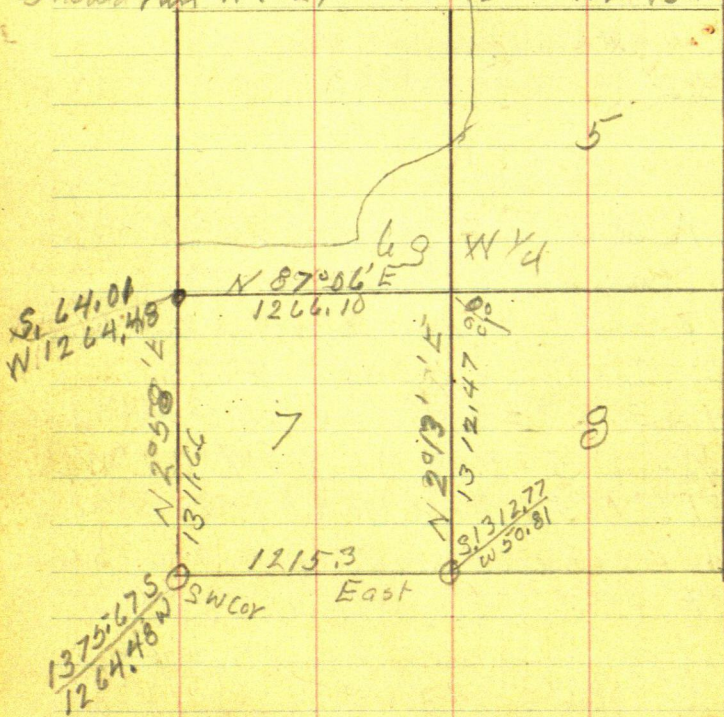
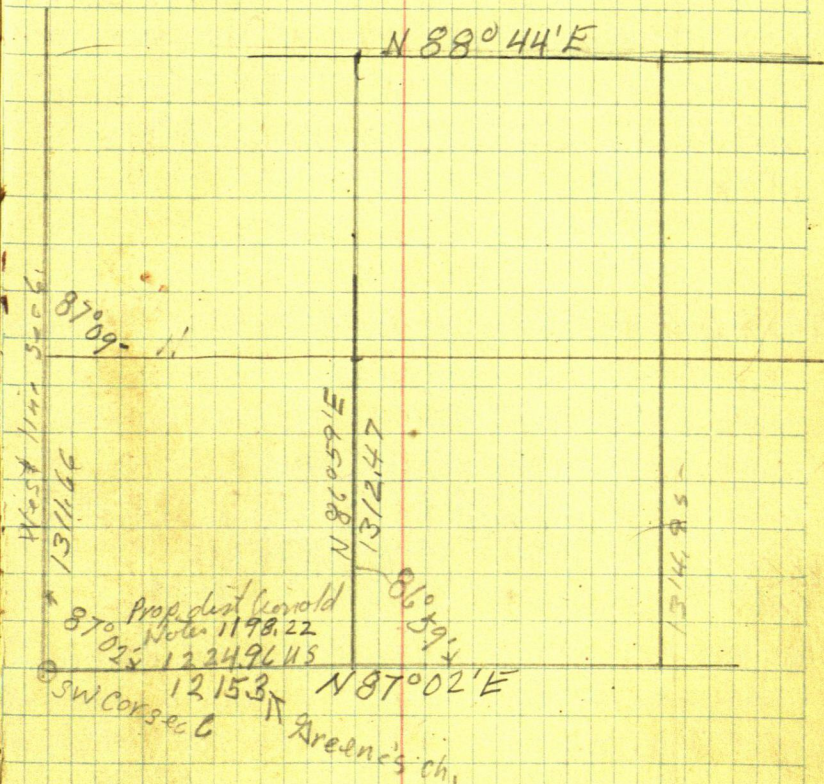


Fig the course of E & W of sec
6. Twp 140 Rge 26 using the
W line sec. 6 as N + S = N 88° 44' E
using line between I M & shown
in plat 215



1311.66

Platting Oak Park Beaches by
Green being part of Gov't Lots 5-8-9
Acres. 140-26 His Notes in
Field Book 109

fig Correction of our Random S¹/₂ line

$$1264.48 / 64.01 \quad 0506216 = 87^{\circ}06'$$

as we have run this line N $87^{\circ}02'$ E 573.35
this leaves our line $0^{\circ}04'$ too for N
 $0^{\circ}04'$

$$\text{Sine } 001164 \times 573.35 = 0.67'9$$

$$\text{Cosine } 999999$$

but 573.35 goes S 0.67 ft

but 473.25 W goes S. 0.55 "

but 228.25 W " S. 0.27 "

but 101.5 W goes S. 0.01

fig pg. 148

N 1309.90
E 67.88

N 205.8' E
1311.66

1215.30

1312.47

E 50.76
N 1311.58
N 205.8' E
1312.47

$$\begin{array}{r} 6788 \\ 5076 \\ \hline 1712 \end{array}$$

$$\begin{array}{r} 121530 \\ 1712 \\ \hline 119818 \end{array}$$

from S $\frac{1}{16}$ cor W side sec 7 run

N 87° 02' E 573.35

S $\frac{1}{16}$ East

Courses	dist	Sine	Cosine	North	East	south	West
N 87° 02' E	573.35	998660	051755	29.67	572.58		
N 24° 31' E	146.4	414958	909841	132.29	60.33		
N 58° 40' E	215.65	854156	520016	112.14	184.20		
N 75° 20' E	271.7	967415	253195	68.79	262.85		
N 62° 46' E	130	889150	457615	59.49	115.59		

Spk. 2 ft S of Cor fence 402.38 1195.53 post

N 87° 02' E	573.35	998660	051755	29.67	572.58		
N 24° 31' E	145.4	414958	909841	132.29	60.33		
N 58° 40' E	215.65	854156	520016	112.14	184.20		
N 75° 20' E	271.7	967415	253195	68.79	262.85		
N 29° 57' E	271.5	499244	866461	235.24	135.54		
N 11° 12' E	349.35	194234	980955	342.70	67.84		
				920.83	1283.36		

S 62° 42' W 23.5 888617 458650

10.78 2088

N 88° 20' E 144.25 999577 029085 4.20 144.19

S 87° 06' E 155.5 998719 050593 155.30 7.87

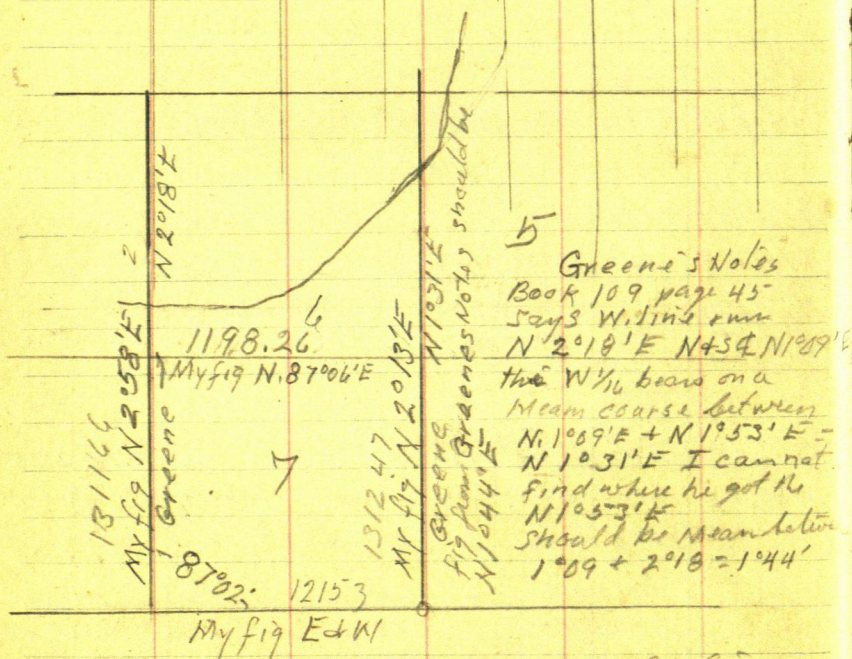
To I.M lot corner S E cor of lot 12 on Trelip lake

Oak Park Beaches

S.W. cor of lot 6 on Trelip Oak Park Beaches
I.M on Brink Lot cor

NE cor lot 7 or SE cor Lot 6 sec 6-140-26
called 00 runs

Courses	distance	Sine	Cosine	North	East	South	West
S 20° 13' W	131247	038678	999252			131277	5081.
S 87° 02' W	13153	998660	051755			6220	121367
North	131166			131166		1375.67	126448
N 87° 06' E	126610	998719	050593	64.01	12448		
				1375.67	126448		



above sketch shows my courses fig from
angles taken and Greene Courses from his Notes
Book 109 on page 44+45 Note: his fig do not check
on W 1/4 line sec. 6.

1°09'

1°09'
153

149

July 23rd 1960

John-Bob + I to Sec. 6-140-26
Tower W 1/4 IM South side Sec. 6
into West and run N 2°13'E along
W 1/4 line random set hubs over
map and cut line N setting 50' spike
hubs we have run this line according
to my figures and it took like it will
hit a cabin

fig

N 2°58'E 1311.66

Sine 051755 X 1311.66 = 67.88 E

Cosine 998660 X 1311.66 = 1309.90 N

N 87°06'E 1266.10 ^{1222.5} = 1220.93

Sine 998719 X 1266.10 = 1264.48 E

Cosine 050593 X 1266.10 = 64.06 N
61.85

S 2°13'W 1312.47 =

Sine 038678 X 1312.47 = 50.76 W

Cosine 999252 X 1312.47 = 1311.58 S

East North West South

1215.30

67.88 1309.90 50.76 1311.58

1264.48 64.06 1272.06 1311.58

1332.36 1373.96

July Monday 18 1960

Bob, John & I to Sec. 6-142-26

we correct hub 573.35 E on

S $\frac{1}{16}$ line sub also hub 473.25

hub 573.35 E $\frac{1}{2}$ S 0.67 of a foot

" 473.25 E " S 0.55 " " "

Town corrected hub 573.35 E S West
on corrected hub 473.25 and run
east.

Bob & I go and chain rough the S
line Box & Lot 7 and find it to be 1314.2

Bob & I beg at hub 573.35 E on S $\frac{1}{16}$ &
chain E at 63- & road

$$573.35 + 300 = 873.35 \text{ min} + 45.0 =$$

873.35	1198.26
<u>45</u>	<u>918.36</u>
918.35 - hub.	279.91

We set spike hub at 1198.26 E on
S $\frac{1}{16}$ line = $\frac{1}{16}$ corner sig.

Town hub on W $\frac{1}{16}$ line $\frac{1}{16}$ cor bears
L or E $2^{\circ}28'$ - 59.65

from hub N of $\frac{1}{16}$ 59.65 chain N
396.1 hub in road.

$2^{\circ}28'$

$$\text{Sine } 043038 \times 59.65 = 2.57$$

$$\text{Cosine } -999073 \times 59.65 = 59.59$$

92°13' 25.4
2613

87°20'

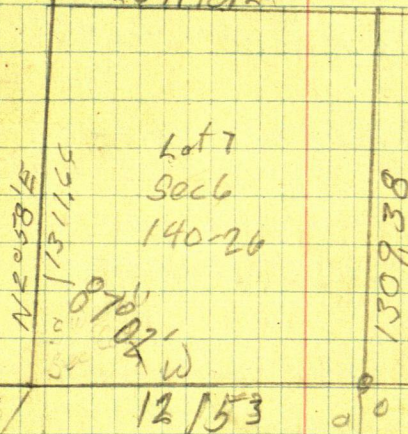
87°06'

234

87°06'
90

137

1-87°06' 1198.26



N 87°06' E 1198.26

$$\sin 1198719 \times 119826 = 1196.73 \text{ E}$$

$$\cos 1198719 \times 119826 = 60.62 \text{ N}$$

N 87°02' E 1215.3

$$\sin 12153 \times 1215.3 = 1213.67 \text{ E}$$

$$\cos 12153 \times 1215.3 = 62.90 \text{ N}$$

1215.3

130138

$$1198.26 \times 130138 = 0^\circ 4\frac{1}{2}'$$

$$130938 / 17.04.00$$

0°4½' =

$$\cos 130938 \times 130138 =$$

130938

5989

$$134897 \times 130138$$

$$1309.88 / 257.000 = 5.0962761 = 0^{\circ}07'$$

$$1368.97 \times 0.01962761 = 2.69$$

$$1309.38$$

$$5965$$

$$134903 \times 0.01962761 = 2.69$$

$$3961$$

$$1765.13 \times 0.01962761 = 3.46$$

Checking figures

by calling the N Time of sec. 6-5280
 that would make Lot 1320 ft wide on
 the North U.S. measurement Lot 7 is
 1215.3 on the South

$$\begin{array}{r} 1215.3 \\ 1320 \\ \hline 2 \overline{) 2535.3} \\ 1267.65 \end{array}$$

$$\begin{array}{r} 1267.65 \\ 1215.3 \\ \hline 2 \overline{) 2482.95} \\ 1241.475 \\ 1198.26 \\ \hline 43.21 \end{array}$$

$$10271$$

$$\sin 025305 \times 1312.47$$

$$\cos 999480 \times 1312.47$$

$$\begin{array}{r} 396.1 \\ 5965 \\ \hline 5642 \\ 402.17 \\ 15097 \\ \hline 8074 \\ \hline 633.8 \end{array}$$

025305

131247

167135

101220

50610

25305

75915

25305

3321

12153

332

12485

11982

503

1765.13

3642

182155

Aug 1 1960 Correction W $\frac{1}{4}$ line
John Bob & I to triple lake 001962761

correct Hub 1369.03 N goes E 249

" " 1765.13 N " E 346

small white Pine trees on line not hub
N of hub 1369.03 on random & correct

21413
158323

Hub 1583.33 N goes E 3.11 ft to W $\frac{1}{4}$ line
line hit house Turn R or E 1005'

from corrected hub 1765.13 N chain N 56.42
to 1821.55 hub Tower 1821.65 Turn L or E
1005' - 151 ft

Sine 018907 x 157.0 = 2.85

Cosine 999821 x 157.0 = 150.97

at 2052.32 pick on seawall

Tower 2052.32 N BS S 2°13'W by W $\frac{1}{4}$ line
line run S 39°06'W 145

154

Tower 145 BS N39°06'E run W. 18 W
 S 12°24'E lot line
 run S 43°59'W 110.
 Tower 110 BS N43°05' E
 S 21°05'E lot line
 run S 45°52'W 100

Aug 13th 1960

John - Bob & I to Triple Lake Me!
 G - 142 - 26 - Elliot is just leaving
 for the city and Waterhouse did not
 come up this week end. everything
 is mixed up. Everyone will be
 here next weekend - as long as we are.
 here we will run steel lines &
 shore line

* Tower SE cor lot 6 S 1/4 N 87°06'W
 on S line lot 6 the E line lot 6 runs
 N 5°05'E.

We set spike hub along a line 40 ft
 W of E line and 40 N of S line for
 stat lines

At back on SE cor lot 6 read angle
 92°13'

24.34
39
16

79.9

119826
91835
279.91

90.25 155
6

Tower hut 918.35 E on S line lot 6 run N 90°
40 ft at pt N side street hut 918.35 - 25

279.91 ft W of SE cor. Waterhouse has 400

38888

279.91

120.09

from hut 918.35 we chain
west 120.09 ft to split hut

for Waterhouse SW Cor Temp

check course again Tower 1/6 Cor

BS 87°06' W 1/4 E 1/4 line runs N 0°40' W

Tower pt on shore on E line lot 6 BS 50°45'E
from S 36°13' W 145 - W 12

" S 41°18' W 100 W 12

" S 41°50' W 100 W 12

" S 46°11' W 210 - 12

S 51°35' W @ 36 creek @ 110 - W 15

run S 55°30' W 160 - W 15

Tower 160 BS N 55°30' E take cabin cor

SE cor S 10°45' W 99.1

NE cor S 19°38' W 81.25

N.P. tree S 15°27' E 78.9

Ed Waterhouse

12907 Lone Oak Drive

Hopkins Minn

15.6

85
\$1530-

Tues

Sept 6, 1960

Commissioners meet:

Bob + I to Trelipi Lake

Tower over 110-15' from water

Waterhouse's cor. extend this pt

S51°35'W 10 ft to 120-15' from water

Tower 120 BS N51°35'E run

S56°24'W 125' Lot cor W 15'

Tower 125 BS N56°24'E run

S63°39'W 125' Lot cor W 12'

S76°32'W 94 ft W 12±

Tower 94 BS N76°32'W run

N52°57'W

@ 30 W L R @ 90 W 12'

120 W 15' R @ 160 W 15' R @ 169.3 W 10' R

180' back we extend pt 169.3 N52°57'W

3.3 to 172.6

Tower _____ BSS 52°57'E run

S82°06'W 13.25' Lot cor W 10-

13.25 + 90 Lot cor W 6' R + 90 Lot cor W 10'

from pt under. T run N82°06'E 30 to water

90

90

Tower 193.25 BS N82°06'E

180 IM MC bears N87°02'S 90 ft

13.25

to pt 1 ft S

193.25 W. 2 X

Time Sheet

May 26 th 1960	check records	Apr 22 - Bob + I
July 7 th 1960	John - Bob - I	Oct 12 - Ed + I
July 8 th 1960	" " I	Oct 13 - Ed - Bob + I
July 10 th 1960	figuring	Oct 15 - Ed + Bob + I
July 13 th 1960	John - Bob - I	Oct 16 - Ed + I
" 18 1960	" " I	Oct 21 - Ed + John
Aug 1 st 1960	" " I	
Aug 13 th 1960	" " I	
Sept 6 1960	Bob + I	
Sept 21 st 1960	Bob + I 1/2 day rain	

Sept 21 - 1960

Bob + I to Trelipi Lake arrive at 10 -
Tower spike but in E road site E Voratoo
& Turn L 70° -

Sin = 939.693 into 100 = 106.42 into 140 = 148.98

Cosine = 342020

Mrs. Elitt wants to know where the lot line
bet lots 8-9 will run we measure Tower
spike site N 63° 39' E & run south

Tower car to lots 7-8 BS S 63° 39' W & run
S 14° 45' E to miss and take in Pine trees
Rain out

Sept 22nd 1960

Bob + I to Trelipio Lake

we set up on hut in E turned 50° 106.42' -
100 South Var on 70° + turn Var to 0 and
ran E & W on line 100 ft South & parallel
to S $\frac{1}{16}$ line

Then the E 400 ft hut BS S 87°06'
& run S. parallel to W line at 100.1
intersect our line 100 ft S of S $\frac{1}{16}$ line.

^{AP of road}
Then pt 400 ft W & 100 ft S of SE cor lot

6- take (inter angle of road) 126°43'

$$126^{\circ}44' \div 2 = 63^{\circ}22'$$

$$\text{Sine } 893894 \text{ into } 40 = 44.75 \text{ Road AP.}$$

$$\text{Cosine } 448279 \times 44.75 = 20.06$$

At still at AP. BS S 87°06' W Street +
Lat line bears or runs N 34°20' E

AP Corner AP, — BS S 34°20' W
run N 45°12' E

$$\text{At still at AP. angle } - 168^{\circ}37' \div 2 = 84^{\circ}19'$$

$$\text{Sine } 995084 \text{ into } 40 = 40.20$$

$$\text{Cosine } 099030 \times 40.20 = 3.98$$

Oct. 12th 1960

Edd is going to work with me
as he was laid off we go to Trilipe Lake
Tower Back Street line & intersect
E. line set spike for S E Cor lot 1
Turn 90° and set spike 40 ft across fence
to mark S line of street & in

Eat lunch

go to NW Cor lot 1 - 145 ft chain along
shore 110 to NW Cor lot 2 chain
100 and set spike for NW Cor lot 3. chain
westerly 120 to NW Cor lot 4 chain
" 100 to NW Cor lot 5 chain
w 100 to NW Cor lot 6

Tower NW Cor lot 6 BS N 57° 35' W
on flag at old Temp spike of NW Cor lot
5 and run S 44° 45' E reads 8° 19'
to point on S line of Gov't lot 6 - 400 ft W of
SE Cor of said Gov't lot 6

Tower NE Cor lot 1 site S. 0° 40' E & run S 36° 12' W 145'
angle 36° 52'

Tower NE Cor lot 2 BS N 36° 12' E run S 41° 16' W 110' angle 185° 05' S. angle
also angle to lot line ^{SE angle} 128° 46' = S 15° 04' E

Tower NE Cor lot 3 run S 42° 16' W 100 - S. angle 181° 00' Lot line
SE angle 113° 58' = S 24° 46' E

Tower NE Cor lot 4 run S 46° 05' W 120' S angle 183° 49'
Lot line S angle 106° 34' = S 31° 12' E

Turn NE cor lot 5 run S $46^{\circ}25'W$ 100

South angle $180^{\circ}21'$ Lot line SE angle $97^{\circ}55' =$
S $36^{\circ}01'E$ rain

Oct. 13th 1960

Ed - Bob + I to Upper Trilipe Lake.

We ran N line of 40 ft Street W
100 ft S of S line of South lot 6
intersect west line of said lot 6

chain E 90 ft set spike + 48.7 hub on top
from $\frac{1}{2}$ cor chain S 99.30 to intersection
of N line of street with west line of lot 6
clock angle of N line + S $\frac{1}{2}$ line

Work Tom line bet lots 11-12 from hub
on top chain downhill 150.8 to pt for IM
10 ft from water from hub under π chain S
100 = ϕ old road + 2.80 = hub. + 85.9 SE cor lot
12. Turn SE cor S 17 $^{\circ}$ W on SW cor lot 12 turn
R. $92^{\circ}59'$ to lot line.

Turn hub on S line Lot 11 chain E 41.3 to
SE cor lot 11 site S $87^{\circ}06'W$

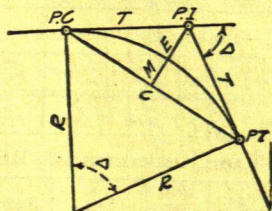
from hub 48.7 E of SW cor lot 11 ϕ old road
runs N $21^{\circ}45'W$ 75 40 then NW to
that on lot line

- Oct 14th rained Oct 15th

Bob, Ed, + I to Trilipe lake work Tom line bet
lots 10-11 find big N.P. offset .5 from pt for IM on chain
chain S 159.2 hub on top + 146 hub on top + 43'
Turn cor NW angle reads $92^{\circ}50'$

DIETZGEN'S RAILROAD CURVE AND REDUCTION TABLES

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



CURVE FORMULAS

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

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

Middle ordinate= $M = R(1 - \cos. \frac{\Delta}{2})$ (5) $= R \text{vers} \frac{\Delta}{2}$ (6)

External= $E = T \tan \frac{\Delta}{4}$ (7) $= R \div \cos. \frac{\Delta}{2} - R$ (8) $= R \text{exsec} \frac{\Delta}{2}$ (9)

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

EXPLANATION AND USE OF TABLES

Stations.—Given P. I.=Sta. 161+60.35 to find Sta. of P. C. and P. T. $\Delta=62^\circ 10'$ $D=8^\circ 20'$. From Table IV for 1° curve $T=3454.1$ and $\div 8\frac{1}{3}=414.49$ ft. From Table V correction=.36 or $T=414.85$ ft. P. C.=Sta. P. I.— $T=157+45.50$. Also from (4) $L=746.00$ and P. T.=Sta. P. C. + $L=164+91.50$.

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

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

Externals.—May be found in similar manner to tangents. Thus E for curve above is 91.37. For from Table IV for 1° curve $E=960.6$ for $8^\circ 20'=960.6 \div 8\frac{1}{3}=91.27$ and from Table V correction=.10 or $E=91.37$ ft. Or suppose $\Delta=32^\circ$ and E is measured and found to be 42 ft. What is D ? From Table IV $E=230.9$ and $\div 42=5.5$ or $D=5^\circ 30'$.

$$\begin{array}{r} 48000 \\ 343 \\ \hline 47655 \end{array}$$

$$\begin{array}{r} 520 \\ 14 \\ \hline 518.6 \\ 00 \end{array}$$

$$\begin{array}{r} 380 \\ 16 \\ \hline 3784 \end{array}$$

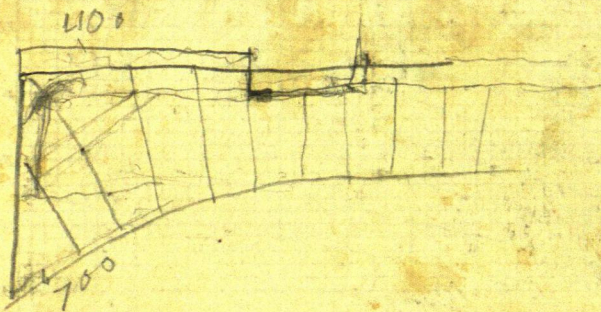
6225'

sin 462265

or 886742

462265 -
10133

$$\begin{array}{r} 4803 \\ 378.4 \\ 3846 \\ \hline 1243.3 \\ 51.86 \\ \hline 47655 \\ 2238.45 \\ 3614 \\ \hline 239985 \end{array}$$



594

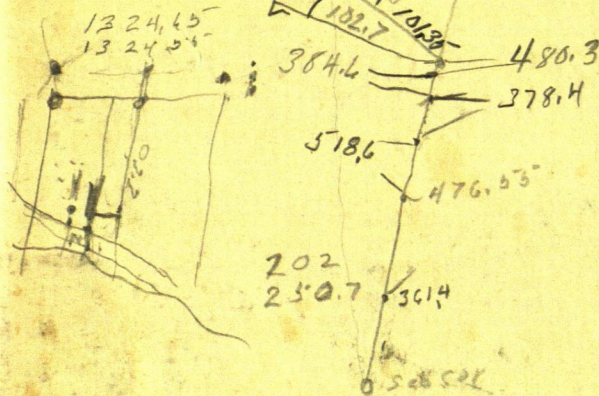
Willis Copeman
Grundy Center
Iowa
Box 42

1833

80

1753

Oak 24⁺ 1/4 70°32'
162°28'



22'
361.4
476.53
518.6
378.4

1734.95

310
2.8

1142
46
159.2

80.7

3

145

115

108

114

103

189

674

279.7

21965
4

49.85

9

4085

169.75

0

220.3
224.2

346

145.5

110

25.5

3

4

5

6

2140
2140
1920
1920

145.3

159.2 DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1½.

For Single Track Embankment.

H	0	1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.2	8.3	8.5	8.6	8.8	8.9	9.1	9.2	9.4	0
1	9.5	9.7	9.8	10.0	10.1	10.3	10.4	10.6	10.7	10.9	1
2	11.0	11.2	11.3	11.5	11.6	11.8	11.9	12.1	12.2	12.4	2
3	12.5	12.7	12.8	13.0	13.1	13.3	13.4	13.6	13.7	13.9	3
4	14.0	14.2	14.3	14.5	14.6	14.8	14.9	15.1	15.2	15.4	4
5	15.5	15.7	15.8	16.0	16.1	16.3	16.4	16.6	16.7	16.9	5
6	17.0	17.2	17.3	17.5	17.6	17.8	17.9	18.1	18.2	18.4	6
7	18.5	18.7	18.8	19.0	19.1	19.3	19.4	19.6	19.7	19.9	7
8	20.0	20.2	20.3	20.5	20.6	20.8	20.9	21.1	21.2	21.4	8
9	21.5	21.7	21.8	22.0	22.1	22.3	22.4	22.6	22.7	22.9	9
10	23.0	23.2	23.3	23.5	23.6	23.8	23.9	24.1	24.2	24.4	10
11	24.5	24.7	24.8	25.0	25.1	25.3	25.4	25.6	25.7	25.9	11
12	26.0	26.2	26.3	26.5	26.6	26.8	26.9	27.1	27.2	27.4	12
13	27.5	27.7	27.8	28.0	28.1	28.3	28.4	28.6	28.7	28.9	13
14	29.0	29.2	29.3	29.5	29.6	29.8	29.9	30.1	30.2	30.4	14
15	30.5	30.7	30.8	31.0	31.1	31.3	31.4	31.6	31.7	31.9	15
16	32.0	32.2	32.3	32.5	32.6	32.8	32.9	33.1	33.2	33.4	16
17	33.5	33.7	33.8	34.0	34.1	34.3	34.4	34.6	34.7	34.9	17
18	35.0	35.2	35.3	35.5	35.6	35.8	35.9	36.1	36.2	36.4	18
19	36.5	36.7	36.8	37.0	37.1	37.3	37.4	37.6	37.7	37.9	19
20	38.0	38.2	38.3	38.5	38.6	38.8	38.9	39.1	39.2	39.4	20
21	39.5	39.7	39.8	40.0	40.1	40.3	40.4	40.6	40.7	40.9	21
22	41.0	41.2	41.3	41.5	41.6	41.8	41.9	42.1	42.2	42.4	22
23	42.5	42.7	42.8	43.0	43.1	43.3	43.4	43.6	43.7	43.9	23
24	44.0	44.2	44.3	44.5	44.6	44.8	44.9	45.1	45.2	45.4	24
25	45.5	45.7	45.8	46.0	46.1	46.3	46.4	46.6	46.7	46.9	25
26	47.0	47.2	47.3	47.5	47.6	47.8	47.9	48.1	48.2	48.4	26
27	48.5	48.7	48.8	49.0	49.1	49.3	49.4	49.6	49.7	49.9	27
28	50.0	50.2	50.3	50.5	50.6	50.8	50.9	51.1	51.2	51.4	28
29	51.5	51.7	51.8	52.0	52.1	52.3	52.4	52.6	52.7	52.9	29
30	53.0	53.2	53.3	53.5	53.6	53.8	53.9	54.1	54.2	54.4	30
31	54.5	54.7	54.8	55.0	55.1	55.3	55.4	55.6	55.7	55.9	31
32	56.0	56.2	56.3	56.5	56.6	56.8	56.9	57.1	57.2	57.4	32
33	57.5	57.7	57.8	58.0	58.1	58.3	58.4	58.6	58.7	58.9	33
34	59.0	59.2	59.3	59.5	59.6	59.8	59.9	60.1	60.2	60.4	34
35	60.5	60.7	60.8	61.0	61.1	61.3	61.4	61.6	61.7	61.9	35
36	62.0	62.2	62.3	62.5	62.6	62.8	62.9	63.1	63.2	63.4	36
37	63.5	63.7	63.8	64.0	64.1	64.3	64.4	64.6	64.7	64.9	37
38	65.0	65.2	65.3	65.5	65.6	65.8	65.9	66.1	66.2	66.4	38
39	66.5	66.7	66.8	67.0	67.1	67.3	67.4	67.6	67.7	67.9	39
40	68.0	68.2	68.3	68.5	68.6	68.8	68.9	69.1	69.2	69.4	40

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 41.9. For same slopes but other widths of roadbed correct above figures by one-half difference in width of roadbed; thus in example above for 20 ft. roadbed distance will be $41.9 + (20 - 16) \div 2$ or 2 ft. added to 41.9 = 43.9. For slopes of 1 on 1 see inside of front cover.