

C.C.C.
8

K&E
GILGFIELD BOOK
360°

MADE IN GERMANY

8

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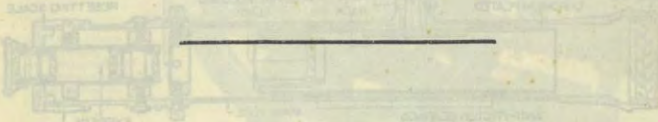
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Ray H. Hall

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The pages in this book are exactly like those in K & E Field Book No. 360. The K & E line includes other Field Books, Transit and Mining Transit Books, Level Books, Cross-Section Books, Earthworks Books and Topographical Books.

33-35-6

Tornahawk Airport (Spring 1937)
— continued from B. 7 —

" " " " " P. 59
Apr 30th '37 Overcast - 50° Windy
R. H. Hall with Loveless + Higgins

Measure S 84° 30' W on $\frac{1}{2}$ Proposed
purchase unit

- 277.77 WCD man (813' NW of L.P. Semo)
- 177.17 $\frac{1}{2}$ main track MT&W R.R.
angle W to S = 83° - 40'

\therefore Course = S 0° - 50' W
(formerly 53°)

- 76.57 W. limit RR right of way
Set 3 $\frac{1}{2}$ ' r. r. rail with
ball of " centered

- 13.12 Intersect $\frac{1}{2}$ abandoned spur
($\frac{1}{4}$ of Assessor's Plot #170)

angle SW to NW 80° 56' \checkmark 121° 53'

\therefore course spur = N 14° - 34' W

P.I. = 238.8 N.Y. from P.I.

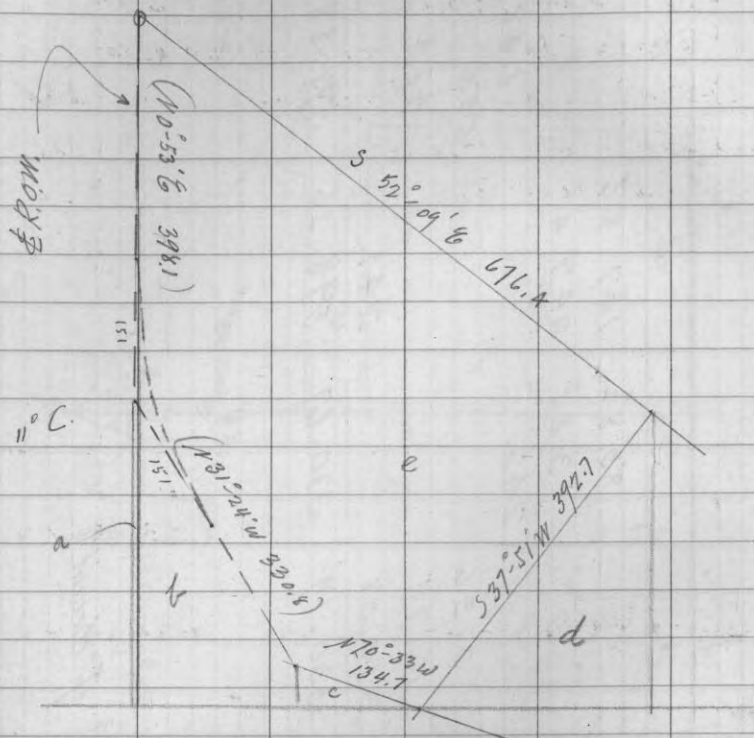
with $\frac{1}{4}$ Right o-way

" = 416.2 S $\frac{1}{4}$ from an

Iron bolt at N. end

set iron bolt below RR ties \checkmark

Tomahawk Airport
(Frank Theiler Est. Tract)



Course	Dist	N	S	E	W.
N 0° 53' E	398.1	398.0 ⁵		6.13	
S 52° 09' E	676.4		415.04	534.10	
S 37° 51' W	392.7		310.08		240.96
N 70° 33' W	134.7	44.8 ⁴			127.01
N 31° 24' W	330.8	282.3 ⁵			172.35
		725.26	725.12	540.23	540.32

$$a = \frac{725.3 + 327.2}{2} \times 6.13 = 3,226.$$

$$b = \frac{327.2 + 44.9}{2} \times 172.4 = 32,060.$$

$$c = \frac{44.9 \times 127}{2} = 2,850.$$

$$d = \frac{310.2 \times 241}{2} = 37,390.$$

$$\text{Entira fig.} \quad \frac{725.26 + 310.2}{2} \times 534.1 = 43,560$$

$$\begin{array}{r} 207,276. \\ - 2,310 \text{ in curve} \\ \hline 204,966 \end{array}$$

4.71 Acres.

Wolke's projection
 $\frac{66 \times 113}{2} = .09A.$

$$\frac{.09}{4.62} \text{ in.}$$

Sec. 19 - 40 - 7 E

Subdivision of Sec. with view
of plating a strip of lots 100 ft
wide and 300' ± deep; said
plating to embrace the frontage
of Govt Lots 1 & 2 = (E ½ NW ¼)
later " " 3 & 4

June 2nd 37

Looked over west line with
Hassler & Wittenkamp - rain.

P.M.

Searched Dorr & Vaughan notes in
Rhinelander - found nothing.

Search for Evidence ←

Many poplars grew here - nothing
definite.

LW

June 3rd 1937 fair 60 to 75°
Hall, Hassler, Wittenkamp + 2 CCC

Orig. NW corner. Drove temp. plug in
hole where Hassler had found old post
agreeing with faint boxing on Orig.
Pine (strip) SW + with a birch strip NE.

← See page 14 →

Run S. on random (Var. 1°-50' E)

0.0 Orig NW x

3.195 Hub at summit

10.983 " V 1°-56'

19.343 " Sun too high for obs.

" + enter open
var 1°-53'

20.00 Tally picket

32.932 Hub

39.50 "

40.067 " in line of fence W

" " Stow 91°-50' ±

" is in E road NE (r 31° E PC)
& along shoulder road S

LW

Same random - continued (along E shoulder)

50.937 Hub

60.00 "

76.02 Hub

80.113 " in about E old 51 west

" 4' clearing E.

E old 51 S. is 45 lbs. E.

+ .25

80.363

Drive Hub for contemplated
1 Rod offset S.

+ .25

80.613

do 2nd offset.

" Th. E at 90°
@ 45 lb. line of old 51 South.
∠ E to S = 90°-36'

19-40-7 E.

Search for Sec. Car mon. + evidence
of orig. logs. Not so good.A deck of Logs covers the spot
N37W 1.69 from P.I. old 51 Tangents
No stp. no course + dist from point
where E Rd N + Rd. W. intersect.

- Should look for notes in Eagle R.

Observe Sun at 80.113 turning
S to SW off our random 75° F.① 3:27^{pm} C.S.T.

alt 41°-40' ∠ 79°-13'

Sun calc S 79°-15' W
02'② 3:29.5 alt 41°-12' ∠ 79°-44'
calc S 79°-47' W
03'③ 3:31.5 alt 40°-48' ∠ 80°-11'
calc S 80°-14.5' W
03.5'

(∴ Random hrs 50°-03' W)

June 5th To Eagle River - No
recorded survey by County Surveyor.
Co. Hwy can give no info.

Sec. 19-40-7 E

← N

June 4th 1937 Overcast - 65° +
Hall, Hassler, Wittenkamp, Novak &
McCaughn

Orig. NW₁₉. Mark new bearings:
Turning from random 44 (set at 180°)
Var. Jack Pine 7" S63W .546
2°-12' 242°-35' S62°-35' W = 36.04'

on vermer

On N₄₀S neck
between
natural marshes

W. Pine stp. 26" N81W 298 - 19.7
278°-20' N81°-40' W

N. Pine 5" S23½E .918 - 60.6'
156°-03' S23°-59' E

Orig^{ls} br. (N) 53°-40' (E) record
& 192° = (S) 12° (W)

(6/7/37) Set 4" WCD pipe 8" exposed.
Run 6" on random by 90° off random
= S to E to 5.146

- ① 90° - 00.5'
② 179° 59' (89°-59.5)
③ 269° 58' (89°-59.3)

89°-59'

June 4th '37 continued - 65° F
Direct solar obs. at NW₁₉.
Turned from line S. assumed as 180° 00'

① 9:02 AM C.S.T.
alt 47°-40' Az. 108°-39'
Az sun calc. 104°-40'

② 9:04 alt 48°-05' 109°-12'
calc. 109°-12'

③ 9:06 " 48°-16' 109°-33'
calc. 109°-33'

v on Random 44 - 180°-00' ✓
This indicates line to be on Meridian

E. on Random 44 - (90°) 89°-59'

0.0 NW₁₉

.35 Enter open P.L. bag SE NW

2.60 Jr. same SW NE

Approx .8 A. (extends 3 rds. ± S)

2.655 pipe stp. Th. on + slope 19°-15'
1.648 = 1.556

+ 1.556

4.211 To A

4.28 ± Road

5.146 hub

N.0037 = .24'

4-19-40-7 E. continued.

7.734 Hub. var. on line $1^{\circ}44'6''$

$\frac{.0056}{.37}$

19.033 " + Tack + descend. $\frac{.0138}{.91}$

19.844 R for slope $20^{\circ}45'$

+ 1.87 2.00 " = 1.87

21.714

+ 286

22.000 Resume meas.

21.70 NW x Swamp brs S. 2nds \pm

23.192 Hub. $.0168 = 1.11'$

$\frac{.01865}{.123}$

25.716 " + Tack + Enter spr. +

Tam. Swamp

NW r S (S 1ch. Th. W)

30.50 \pm Channel - build bridge -

32.00 1r. plowage

32.295 Hub. $.0234 = 1.54'$

Continued June 7th Hall, Novak, McCaughn

35.171 Hub. & Tack in bottom $\frac{.0255}{1.68}$

37.792 " " " on W shoulder plateau. $\frac{.0274}{1.81}$

Re-set hubs 80.363 + 80.613 on W

June 8th 1937 Fair 70°

Hall, McCaughn, Novak, Wittenkamp

Offset B.S. at 37.792 4" S to pass

$\frac{.0297}{1.96}$

41.00 Maple 5" + remain on sd. $\frac{1}{2}$ k. $\frac{1}{2}$ ft

42.302 Hub + Tack in W. ditch $\frac{.0307}{.0357}$

$\frac{.0307}{.0357}$

42.43 \pm Road

" brs S41°W PC for 2nd ch Th.

more Sth

43.019 round hub $\frac{.0312}{.0362} = 2.39'$

43.102 R for clinometer

.54 .618 on $\pm 29^{\circ}10'$ = .54

43.642 Hub + Tack on shore

(2880.4)

" brs N43°E PC

about 1ch. + continues curve 8ly

from line shore brs S40°W PC.

$\frac{.0316}{.0366} = 2.42$

No evidence here. Shore has changed.

By meander notes from S.

Cor. was apparently S. 4.60 from

std. 39.05

$\frac{.118}{6\frac{3}{4}}$

MC must have been

at Top of bank - no blazes here nor any where

£ 19-40-76 (Trav.)

Offset .50 S. of sta. 80.113

Th. E by 90° to stay in field
 P.O. = sta 80.613 on W

2.949 Hub + Tack
 Stake

28.54 Hub + Tack on edge field

Th. E by on Trav.

② Defl. & R. 2° 02' (4° 04') 17.806

at 11.00 Brink R in gully
 $+ .98 \angle 15^{\circ} 22' = .945$ to R
 $+ 1.00 \text{ angle } 4^{\circ} = \frac{.998}{1.943}$

= 12.943

@ 14.00 Hub in potato field
 17.806 A.P. .37 S. of fence

③ Defl. & L. 8° 08' 1.849

June 9th '37 75° Fair.

Hall, Wittenkamp (in Am) + McCaugha
 Solar Obs at 28.54 & offset

↳ turned E to SE to sun. (backsight = 80.613)

- ① 9:05 CST alt. 47° 50' = 1752'
 line calc. 189° 58' E
- ② 9:08' alt 48° 26' = 18° 43'
 " calc. 190° 00' E
- ③ 9:10 alt 48° 44' 19° 09'
 " 189° 56' E
- AVE = 189° 58' E

Continue trav. planning R. (in adjustment)

④ 99° 59' (180° 03' E) 2.115

⑤ 84° 44' (184 44 E) 8.362

cross wire fence @ —

8.362 Hub at top of bank

.45 N of fence

- ⑥ 105° 59' (574° 01' E) 1.89 To
 our temporary stake at shore in line
 of old fence. Two steps uprooted
 at waters edge may be original?
 No other evidence in sight.

Re-turn = N to E at 80.613

① $89^{\circ}59'$

② $180^{\circ}00'$ ③ $270^{\circ}00'$

Re turn = E to S at .45 E of 80.613

to E of old 51 just N of 70

$90^{\circ}38'$ $181^{\circ}17.5'$

Chain $S\frac{1}{4}$ in W edge of old 51

0.0 of tape .50 N of our 2nd offset

.50 our " "

20.03 find out out line why.

40.035 E Hwy 70 (old road)

This seems well established
altho no evidence in sight.

- No Gort. Brigs called for.

$$\begin{array}{r} 80.113 \\ 40.035 \\ \hline 3) 120.148 \end{array} \begin{array}{r} 40.0493 \\ \hline 80.0986 \end{array}$$

$$\begin{array}{r} 52866.6 \\ 26433.3 \\ \hline 13221.65 \\ \hline 3964.95 \end{array}$$

\therefore Sta 80.10 Meridian pro rate

40.05

20.025

60.075

$0^{\circ}38'$ in $39,535 = .437$

.45

.013

\therefore Our random produced
agrees within .013 of E Hwy intersectn
at W $\frac{1}{4}$ Sec. 30

June 9th '37 Solar obs. for Azimuth

R at .45 E of 80.613 135 m 28.54

LS W to SW to Sun $75^{\circ}F$

① 3:09.4 PM Depot time

alt $45^{\circ}44'$ = $14^{\circ}50'$

line calc $S89^{\circ}59'W$

② 3:12.2 Alt $45^{\circ}12'$ = $14^{\circ}11.5'$

line calc $S90^{\circ}04.5'W$

③ 3:14.2 alt $44^{\circ}51'$ = $13^{\circ}44'$

line calc $S90^{\circ}02'W$

Arc $N89^{\circ}58'W$

Am str " $N89^{\circ}58'E$

\therefore Assume line Due E

Since 4th Random calc $S.0^{\circ}03'W$ at S end

" South at N end

will assume it meridian until I
get Polaris.

Decide to hold our 4th as run

since we cannot agree with both
roads & since our line projected
agrees with intersectn 70 + old 51

19-40-7

Since no other evidence of
 \$ is apparent will align with
 old fence, which residents say
 has been there some years.

If old line was S of fence
 evidence would be in clearing.
 Can find no signs N. of fence.

Lat + Dep. calc. from 80.10 on 4W
 to our stake at lake calc.

$$S88^{\circ}59'2''E \quad 60.41$$

$$Rec = 61.09$$

$$61.09 - 60.41 = .68 \text{ short}$$

$$.01113 \text{ per ch.}$$

$$? = 21.31 \text{ for } \frac{1}{8}$$

$$41.088 = \frac{1}{7}$$

This line will fall .044 S of fence
 at 46.33 & .037 S at 58.58
 & cut bldg near shore.

\(\therefore\) will calc. a line to agree \pm with
 fence at 58.58

4W 19-40-7

June 10th '37 Fair 65° 75° Hall + M^cGaughey
 Set monuments on 4W as follows:

SWx (Sta. 80.10 on line as run)

Set 2'-10" Section of RR rail
 11" below surface, (ball of rail ok)

References:

True Az.	Var 2'-10"	ch	
		(Jack Pine 12" N30°-20'E	.813 = 53.65
		" " 5" N 30°-15'W	.783 = 51.7
		" " 12" S 70°-40'W	1.458 = 96.2
		(250°-40')	

N° lks. scribed on each tree.

S $\frac{1}{8}$ 4W at 60.075 S. of NWx
 Set 2" J.P. 9" below surface, in
 E. ditch

Mark:

T.A.	Var 2'-10"	(Spruce 5" N84°-20'E	.31
		B. Oak 4" S 59° E	.211
		line of fence w brs S.	.032 \pm

44-19-40-7 E.

West 1/4 S.

Set anchored auto axle $26 \times 1\frac{1}{2}$ "
at 40.05 S. of NW₄ (8" below road.)Mark: $164^{\circ} 05'$ dh

T.A.	y. Pine	10"	$S 15^{\circ} 55' E$	1.13	74.6
		5"	$S 68^{\circ} 40' E$.32	21.1
		Aspen	6"	$N 66^{\circ} 10' W$.386
N ^o lks. scribed on trees					
fence cor. post				267.15	.37

 $1^{\circ} 48' E$ N. 1/8 44 at 20.025 S of NW₄.Set car axle 8" exposed (E. edge)
& pitch stake

T.A.	Sack Pine	5"	$S 52^{\circ} 18' E$	1.256
	y. "	12"	$N 25^{\circ} 12' W$	1.878

Marked "85 B.T."

Since \perp N to E at 80.613 checked $90^{\circ} 00'$
& " 44 = N 0 01.5 E

Will call initial course E. 14

 $S 89^{\circ} 58' E$ 28.54 and sincewe wish to agree with fence at $58.58 E$
see page 26

44-19-40-7 E.

Polaris Observation (H.A.)

June 10th '37 Hall, McCaughn, Wallock.

Set watch with Woodruff Depot clock.

R at sta. 50.937, object-stake at 39.40

Turn \perp E to W. (Polaris to line.)

- 8:36 PM \perp $0^{\circ} 03'$
- 8:40.5 " \perp $0^{\circ} 05'$ ($08^{\circ} 03'$) ^{inverted}
- 8:55.5 " \perp $0^{\circ} 11'$ - telescope normal

Results

- Polaris to line $0^{\circ} 03'$
" " Meridian 04.8
 \therefore line brs N $0^{\circ} 1.8' E$
- Polaris to line $0^{\circ} 05'$
" " Meridian $0^{\circ} 06.5$
 \therefore line brs N $0^{\circ} 01.5' E$
- P. to line $0^{\circ} 11'$
" " Meridian $0^{\circ} 12.25$
line = N $0^{\circ} 01.25' E$

Grand Arc = $N 0^{\circ} 01.5' E$ would mean shift of $3\frac{1}{4}$ lks E at 80.10 to be
will leave as run. on Meridian.

Revised Lat & Dep. Table \$ 19-40-7 (after Meridian determination 26)

True Course	Ch.	N.	S.	E.	Σ
1 5 0°-01.5' W	.513		.513		
2 5 89°-58' E	28.54		.017	28.54	28.54
3 5 87°-56' E	17.806		.642	17.794	46.334
(4 1 83°-57' E	1849	.195	.505	13.99	42.531
5 5 80°-01' E	2.115		.367	2.083	48.173
6 1 84°-46' E	8.362	.763	.522	8.327	50.256
7 5 73°-59' E	1.89			1.816	58.583
					60.40
					Σ = .01826 =
					Tang 1/2 = 02.7
					Cor. 5 88°-59.3' E

Since it is desired to clear Bldg. near lake
 Will correct Trar. to Run S 89°-00' E from Sta x
 7/3/37 B to MC found to be 575'-20" E 123.6' = 1873 ch. See page 26

60.41 = 3987.1
 41.55 = 2742.3

Sta 6 being .582 S. of parallel
 fence .45 S. of A
 58.583 / 1.002 = 1.01762 = Cor 88°-59.5' E Decide on S 89°-00' E

∴ .01746 x Total Eng at sta. + or - Eng gives adjustment.

Calc 5/4 at 589.00' E 41.55 from Sta x = .725 S + 41.544 E
 A at 14.00 φ = 1.035 S + 42.531 E
 = .310 - .987

If advisable to run from 11.00 not set.
 11.00 = .530 + 28.54
 .897 S + 10.993 E
 .927 = 39.533 E

calc # = .725 S + 41.544 E
 1202.11 ÷ 2.0111 W = 10044 = 184-16 E = 2.022 ch.
 line = 187 56 W
 = 172-12 W to 1 E

Adjustments on A to secure True Crd alignment - See pages 15-17
 ∴ E to W line should run S 89°-30' E
 line
 189 245
 179 201
 = 90-28.5' N to E of 4

19-40-7 E

June 15th '37 Fair 75°R. H. Hall with M^cCaughn + Jerdee

Set MC on $\$.048$ ch. N. of
our tempy peg. Set steel shaft
42" x 1 $\frac{1}{2}$ " (12" exposed)
Cedar post alongside.

Packet Compass { B. Oak 3" N 47° W .205^{ch 13.5}
No Var. { " 3" S 25° W .231^{15.25}

Thence N^{1/4} () on shore 1.515^{=100'}
+ set Trav. peg 156°-41 $\frac{1}{2}$ ' E 1.863
from sta. 58.583 (< left 28°-04.5')

Set S. 1/4 cor at 41.55 (S 89°-00' E from
SW x) by N 72°-34' W 1.035 ch from
sta. 42.531 (page 26).

Set R.R. Rail (E. Web) + Cedar post.

1' S. of line of fence posts

Orient by Az 107°-26' on sta. 42.531 (53.5)

J.A. { B. Oak 4" 330°-40' = N 29°-20' W .811
V-556 { do 3" N 6°-25' E .545 (36)

Old saved stake brs w⁴ in fence. 94

Start N 0°-01.5' E on 1/4 line — see page 39

Correct Trav. stations 46.33 - 48.17 - 50.25 - 58.58

Setting solid stakes. Fence agrees fairly
well, being N. or S. of line. by turns

(29) in 10+11 37-4

June 16th '37 Fair 80°Hall Jerdee M^cCaughn

Continue $\$$ E^{ly} from E end brushing
(in E^{1/4} Sec 10?)

N 33° E PC

N 62° E

① + 29° rt. 14°C T. 1.06 ext .134

② N 22° E

+ 40° Left 20°C T. 1.04 ext .183

③ N 52° E

+ 29° Rt. 14°C

④ N 90° E

+ 38° Rt 30°C T. .66 ext .11

Continue same course (E)

at 7.40 ± Int. old log trail (1.15 ± N of
Friend's point at jc. rd E).

Continue same tang E + cross low
ground at narrows + int. blazed route^{NE}.
Tang, probably 12 or 13 ch. ?

Have never located 1/4 bet 10+11

Should cruise S. from Sec. Cor. orig.

Sec. 19-40-7 E
E+W 1/4 line.

June 17th '37 Fair 90° breezy
R.H. Hall, M^cCoughn, Jerdee
Start S 89°-30' E on 1/4 Sec line
by ← N to E 90°-28.5'
① 90°-29' ② 180°-38' ③ 271°-26'
Avz = 90°-28.9' or 1/10 excess

Fect

0.0 1/4 S
386. Hub + shift .04' N for correct
+ drive Tack
592 1/2 Old RR grade N80W + S80E to
892 Intersect old E to W fence
do heads E E to E
955.4 Hub + Tack
1407 old gr NW + SE
1422.3 Pitch Hub + Tack 1/8 S.
= 21.55 ch.

7/2/37 Reference 185.

T.A. 1959	} B. Oak 4"	N 9°-20' E	39.85	
		M. Pine 7"	S 51°-15' W	81.15
		M. Pine 4"	S 12°-48' W	81.65
		192°-48'		

Hub

Road to be on line to 1825^(P. 12)
1725^{BE} st.

June 18th 1937 Fair 85°
Hall, M^cCoughn, Jerdee, Heimbach
Continue same line S 89°-30' E
1708.2 Hub overlooking valley SE
Var on 0° Az = 1°-40' E

1840 bottom shallow draw WSW + NNE

2023.6

Hub - summit

2122.3

" 2nd knoll thence ^{on slope}

60' on 26°-29' = 53.7
+ 42.1 level
95.8
+ 6.9
102.7

+ 102.7

2225.0

Hub + Tack Temp MC markers
10' W of water 4' W of Path.

True Az
Var. 1°-50' E } B. Oak 7" N 15°-36' W 43.8'
W.P. sp. 30" S 25°-40' W 7.7'
Ref. Hub N 89°-30' W ^{on line} 25.00'

2225

400

1825

19-40-7 E.
W-Lots 2 & 1

At MC (2225) shore N^y 70' ± To pt.
shore S^y S 22 E PC 75' ± AP
@ 75 def winter rd. S 30 W. Th.
S 72 E 300' ± To pt.

1/8 S @ 1422.3' on 1/4 line

N 0°-01.5' E on True " by = W to N.

@ 89° 31.5

@ 179 04. = 89 32

@ 268° 37. 89 32.3

3) $\frac{95.8(89^\circ - 31.9)}{89} = 31.5$

@ Hub

.4 To fan C

June 23rd '37 Overcast 60° - 80°

Hall, Hassler, Wittenkamp - Continue

0.0 1/8 S. bet W 1/4 S

307.7' Hub more A' W + drive Tack

$\frac{4}{10} \text{ min} \times 308' = \frac{4}{10}'$

599.6 Hub + Tack + descend

828.8 " "

950 Summit

1010.85 H + T

1327.8 " " Temp'y 1/8 S.

1449.1 H + T

1770 E Rd NE (at Top of Hill)

1913.4 H + T

2129.4 " " descend

+ 139.7 100' at 23-1/2° = 91.9
47.8 hor.

2269.1 H + T + enter sup. 139.7

1/4 S E.

June 24th '37 Fair - Hot.
Same party

2480 Iv. sup. NE + SW

2513.6 H + T (summit) Th. along E slope

2657.3 Int. H as run 108.7' W of Hub

- E to S 108.14 calc ✓

@ 89°-53.5 @ 179°-46'

Set Cedar & S. post 1' N of Int.

{ Spruce 4" S 2° E 20.4'

{ W. P. str. 30" S 64° W 18.8'

244°

slope meas to Top
of post.

Lot 5 Sec 19-40-7 E

Transit trav. of shore with A
at our hub 100' N⁷ from MC &
Orient on Sta. 58.583 236°-41.5'
MC hrs 170°-20' = S 9°-40' E 100.
N 9°-40' W

② 344°-47' = N 15°-23' W 100.

15' inland

③ 341°-04' = N 18°-06' W 20' 100.

④ 344°-03' = N 16°-07' W 15 100.

Var on 0° = 2°-13' E

⑤ 346°-07' = N 14°-03' W 100.

⑥ 340°-50' = N 19°-20' W 100.

⑦ 358°-22' = N 1°-48' W 12 75.

⑧ 338°-15' = N 21°-55' W 100.

⑨ 328°-20' = N 31°-50' W 100.

⑩ 359°-55' = N 8°-15' W 10' 100.

⑪ 345°-00' = N 15°-10' W 15 100.

Var. 1°-50' E

⑫ 350°-35' = N 7°-35' W 100.

⑬ 347°-00' = N 13°-00' W 100.

June 25th 1937 Fair to Overcast.
Hall Hassler, Wittenkamp
Continue same trav.

⑭ 351°-07' = N 8°-33' W 15' 100.
Var 2°-18' E

⑮ 349°-48' = N 10°-39' W 20' 100.

⑯ 351°-49' = N 8°-38' W 10' 100.

Var 2°-18' E.

@ 50' old landing

∴ road br S. 50° W forks S at 60'

⑰ 354°-59' = N 5°-28' W 4' 100.

⑱ 342°-57' = N 17°-33' W 6' 100.

⑲ 328°-44' = N 31°-43' W 15' 100.

Var. 2°-14' E.

⑳ 327°-04' = N 32°-36' W 10' 100.

㉑ 318°-38' = N 41°-42' W 9' 100.

㉒ 305°-32' = N 54°-53' W 10' 100.

㉓ 299°-18' = N 60°-42' W 15' 100.

㉔ 261°-20' = S 81°-20' W 15' 100.

㉕ 282°-03' = N 78°-24' W 10' 100.

V. 2°-18' E.

@ 50' Tang to shore

- (26) $293^{\circ}-03'$ = $N 66^{\circ}-57' W$ ^{67 24} 100.
- (27) $304^{\circ}-33'$ $N 55^{\circ}-27' W$ ^{55 54} 100.
1st 20' Tang to shore
- (28) $322^{\circ}-31'$ $N 37^{\circ}-29' W$ ^{37 56} 100.
- (29) $333^{\circ}-32'$ $N 26^{\circ}-28' W$ ^{26 55} 100.
V $2^{\circ}-40' E$.

June 26th '37 Am only
Hall + Wittenkamp - Overcast.

- (30) $322^{\circ}-37'$ $N 37^{\circ}-23' W$ ^{37 50} 100.
Fair $2^{\circ}-40'$
- (31) $310^{\circ}-35'$ $N 49^{\circ}-52' W$ ^{49 52} 100.
- (32) $288^{\circ}-36'$ $N 71^{\circ}-51' W$ ^{71 51} 100.
- (33) $290^{\circ}-09'$ $N 70^{\circ}-18' W$ ^{70 18} 100.
- (34) $294^{\circ}-16'$ $N 66^{\circ}-11' W$ ^{66 11} 100.
- (35) $303^{\circ}-32'$ $N 56^{\circ}-55' W$ ^{56 55} 100.
- (35) & old rd 214°
- (36) $337^{\circ}-12'$ = $N 22^{\circ}-48' W$ ^{22 15} 66.3
To MC E to W $\frac{1}{4}$ mi

Line bxs $270^{\circ}-57'$
actual $270^{\circ}-30'$ error $0^{\circ}-27'$

June 28th '37 Fair 75°
Hall, Wittenkamp, Harness
P over A #1 on shore and orientation
orient by $236^{\circ}-41.5'$ on 58.583
MC bxs $170^{\circ}-19.5' = N 9^{\circ}-40' W$
#2 $344^{\circ}-37' = N 15^{\circ}-23' W$.
Had noted this $344 47$.
This reduces error to $0^{\circ}-17'$

Plot out shore Trav. $1'' = 200'$ +
scale out route for rear line of
lots to lie about 400' SW of + \pm
parallel to shore Trav. This will
leave $\$ 440'$ Wly from MC + run:

$N 14^{\circ} \frac{1}{2} W$	$N 16^{\circ} \frac{1}{2} W$ P.C.	1700' \pm
$N 75^{\circ} \frac{1}{2} W$	$N 77^{\circ} \frac{1}{2} W$	400' \pm
$N 42^{\circ} \frac{1}{2} W$	$N 44^{\circ} \frac{1}{2} W$	480
$N 59^{\circ}-40' W$	$N 61^{\circ}-40' W$	440
$N 46' W$	$N 48' W$	220
$N 15^{\circ} \frac{1}{2} W$	$N 17^{\circ} \frac{1}{2} W$	220

to E to W $\frac{1}{4}$ line 400' W of MC.
Chain this route thru brush by compass
 $0.0 = 440' \pm W$ of MC - (rt in town rd bxs
 $S 8^{\circ} W$ $200' \pm$
250 shallow draw - deepens to E.
950 W. rim pot hole $150' \pm$ dist.
Bal. of route Ok. except $N 48' W$ 220 (thru hollow)

Features-interior 19-40-7

@ 1100' (N 16 W PC from 440 W of MC B)

Intersect wood road N 80 W 25' to

Junction with old log road N 7 E To lake ^{curving}

Traverse " " " SW (PC + pass)

① S 24 W = S 26 W 46 steps = 132'

② S 12 E S 10 E 35 100

③ S 31 E S 29 E 25 71

④ S 2 W S 4 W 40 114

⑤ S 30 W S 32 W 61 174

⑥ S 10 E S 8 E 65 186

⑦ S 38 E S 36 E 43 123

⑧ S 10 E S 8 E 23 66

⑨ S 49 E S 47 E 55 157

⑩ S 10 E S 8 E 34 97

to \$ trav. 16 = 46' Ely of
Sta. 50.256 ch.

Continue N + S $\frac{1}{4}$ line N 0° - 01.5' E

(begin page 28)

Line in hub on trav. line SW of cor.

Thence N 61° - 19' E to our sta. (71.7' N of $\frac{1}{4}$)

at 71.7 = S to S 61° - 19.7 " N 0° 01.7 W
N 0° 1.5 E
+ 0° 21.2'

= .04' E at 71.7 Thence N 0° - 01.5' E by
+ 61° - 17.5 N E to N. v. cut out 900'

June 29th 1937 Overcast 55° - 65°

Hall, Hassler, Harness (Continue)

0.0 RR iron @ S $\frac{1}{4}$

71.7 Hub + Torch

514.8

544

896.4

1047.3

1197.8

1333.6 Temp $\frac{1}{8}$ S.

7/3/37 Move 1' N + set Pine $\frac{1}{8}$ S. post
+ pile stones around - S. brow hill.

W. P. stp 42' S 43 $\frac{3}{4}$ ° E 38.0'

do. 36' N 46° E 23.5'

Start S 89° - 15' E on line (1 hub)

1371.4 H + T. Var 2° E on 0° Az.

1707.7 H + T

2053.9 H + T + descend

2208. " " + resume level meas.

19-40-7

2324.3 Intersect shore tran ✓
18.7 NW of (29). " reads 322°-W

Set tempy MC at Intersectin

B. Oak 4° 305°-30' 24.1
= 154°-30'W

do. 5° 190°-07
S 10°-07'W 28.85

W.P. sta Frag. S 30W 1.1'

N.B. Lat + dep. calc. via $\frac{1}{4}$ + $\frac{1}{4}$ km.
Gives MC # Lot 3 as

2693.46 N & 1760.43 W.

by N + S $\frac{1}{4}$ km 2695.44 N & 1760.53
1.98 excess 10 excess

Decide Harness + I gained 2' on N + S $\frac{1}{4}$
line by breaking chain.

∴ MC & Lot 3 = 2322.3 from S $\frac{1}{4}$
∴ set NW x Lot 5 @ 1334.6 on meas.

⊕ Calc point 440 from MC & as:
N 83°-20'E from trav. sta 50.256
228'

270
235
145
625
480
145

June 30th '37 Fair 65°

Hall, Hassler, Hassler - Wittenkamp
Set tempy stake for SW x lots N 83°-20'E 228.
from trav. pt. as # on page 40.

Thence N 14°-30'W on rear line of lots.

o.o ³⁴⁵ _{30'} stake (Initial point " ") 440' N 89°00' MC
(later found to be 442.5 " " " "
" " " " 25' S. of line.

* .25 Set mon.

x 80. Line $\frac{2}{1}$ N 88°-15'E 445.9

x 160. " $\frac{3}{2}$ N 85°-45'E 440.4

x 240. $\frac{4}{3}$ N 83°-21'E 429.4

(250. gully)

x 320. $\frac{5}{4}$ N 80°-44'E 424.2

346.4 Hub (actually $\frac{346.15}{22.15}$)
26.4

x 400. $\frac{6}{5}$ N 78°-02'E 423.7

x 480. $\frac{7}{4}$ N 75°-22'E 414.9

575.6 Hub ($\frac{575.5}{49.5}$)

x 628. $\frac{8}{7}$ N 71°-38'E 419.8
49.4

x	770.	$\frac{57}{8}$	N75°30'E	393.9
x	820.	$\frac{7}{57}$		406.6
x	950.	$\frac{10}{9}$	N76°07'E	412.2
	1006.2	Hub		
x	1060.	$\frac{10}{53.8}$	N77°30'E	420.9
x	1170	$\frac{12}{11}$	N78°51'E	423.7
x	1280.	$\frac{13}{12}$	N80°10'E	433.8
x	1390.	$\frac{14}{13}$	N81°25'E	441.1
x	1500.	$\frac{15}{14}$	N82°36'E	452.5

Above figures show lots as calc. (July 5th - 10th)

July 1st '37 Fair 65° 80°
Hall, Hassler, Harness - Wittenkamp
Continue N 14°30'W to 1700. Th. N75°30'W

385.7 Interscet N + S $\frac{1}{2}$ line @ 1707.7
 $\frac{21.8}{1729.5}$
 Var 2°03'E
 P.R. reduc = 1728.0

Az reading $\frac{1}{4}$ line = 0°03' $\sqrt{10 \text{ dis}}$

Thence	N 42 $\frac{1}{2}$ 'W	480.	
@		405.8	Hub
"	N 59°40'W	250.	+ enter hollow
"	N 74°00'W	260.	Hub in old gr.

Decide to re-route line beyond 1500.
 > x N7°20'W (352°40') 250. (P.I. 45°C left)
 @ 80. $\frac{16}{15}$ N67°29'E 453.9
 @ 146.9 BC. 45°C left.

160	$\frac{17}{16}$	N50°43'E	415.8
250	$\frac{18}{17}$	N31°10'E	357.4

$\frac{16-34}{179 \text{ @}}$
 $\frac{103-26}{51 \text{ @}}$

P.I. Ext 45°C Bns 51 43 224.23' 35.8

Thence N83°54'W (276°06') (396)

@ 66. $\frac{19}{18}$ N25°08'E 383.4
 103.1 EC 45°C

176. $\frac{20}{19}$ N28°31'E 363.6
 286. $\frac{21}{20}$ N29°26'E 376.5
 P.C. $\frac{323}{396 \text{ @}}$ $\frac{22}{21}$ N29°41'E 408.

" to P.I. Curve #6 (30°)
 Ext Bns. 26°48' 13.3'

Thence N 42°30'W (317°30')

@ 73. EC
 @ 170 $\frac{23}{22}$ N39°22'E 349.2
 @ 340 $\frac{24}{23}$ N50°16'E 373.8
 @ 393.4 BC. #5 C 10° (left)

@ 410 $\frac{25}{24}$ N 43° 40' E 403. to MC.
between 15 Lots 3+4

480. $\frac{26}{25}$ N 28° 23' E 418.8

@ " P.I. of Curve N° 5 Ext brs 218° 55' 6.5'

N 59° 40' W (300° 20') 250.

@ 80. $\frac{27}{26}$ N 25° 44' E 398.6
86.6 EC

160. $\frac{28}{27}$ N 22° 46' E 382.2

(159.9) " BC. 8° Curve N° 4 left.

250 $\frac{29}{28}$ N 21° 07' E 372.3

" P.I. 18° C. Ext brs. 203° 10' 51.64'

N 74° 00' W (286°) 365.8

@ 90.1 EC
260. $\frac{27}{29}$ N 57° 55' E 250. to P.I.
@ 144.1 BC.
Ext 314° 28' 7.7'
N 34° E 208.5
@ 105.9 EC.

@ 255.6 BC. P.I. 30 (57° 55' 241.4) to P.I.
324.2
365.8 P.I. Curve 2 Ext N 53° E 36.9'

North 366' to 1/4 line 375' W from MC.
= sta 1850.

@ 110.2 EC.
@ 260.4 BC Curve No. 1 left.

July 2nd 1937. Partly overcast
Hall, Harness, Hassler, Wittenkamp
Mark references to 1/8 W of Center
— see page 30 —

Stake curves on rear line (roughly)
Reference AP near line (@ 1500' from §)
Tack in Oak N 62° E 19.6'
" " Aspen S 63° E 11.0'
117

Thence N 7° 20' W 250.
" N 83° 54' W + fall 4" S of Int.
Calc " 396. with 1/2 line.

Reference Intersection of rear line + N 7 S 1/4 line
(1728' N by from S 1/4).
Tack in 2" Oak N 11° W 12.2'
" " 3" " N 66° E 15.8'

Thence N 42 1/2° W 480.
Reference A.P. { Aspen S 75° E 13.5'
Oak N 12° E 11.7'

Th. N 59° 40' W 250 + reference pt.
{ Birch N 51° W 17.1'
Poplar N 66° E 11.2'

Th. N 74° W 260 To AP. at road
{ Cherry N 5° E 21.0
Hick N 74° E 15.0

Check $\frac{1}{2}$ Proposed Lot 1.

R at 58.58³ Orient by B.S. 84°-46'

MC from brs. 104°-39.5' 123.6'

[100' @ 17°-24' + 28.2 horizontal]

58.58³ S 84°-46' W 322.8' To pt. 5.78

S 14½° E from Sta. 0.0 on Rear line.

= 7.46' N 442.5' W

189°-02' W

✓ Course of Rear line at 322.8

∠ NE to NW 99°-15.5'

② 198°-31'

99°-15.5' - 84°-46' = 14°-29.5' ✓

Reference SW x Lot 1 (442.5' W of MC) $\frac{1}{2}$

P.G	{ Aspen	569' E	12.3'
	{ Birch	116' E	17.6'

Scale out Shore Trav. 100' = 1"

" " Rear line.

Divide into 30 lots leaving Public

Road to lake in 2 places:

Old sleigh haul just S of MC E + W to

& Thru sag @ 770-820 (Rear line)

+ Running N 75°-30' E To lake

= perpendicular to rear line.

Endeavor to dispose of Rear line

so as to make even feet " " +

lot lines \perp to frontage.

July 12th '37 Hall, M^cCaughn, Hames

Set numbered white stakes as calc.

July 13th Hall, M^cCaughn, Jerdec, Tilka

Continue setting stakes.

Trial line bet 17 & 18

N 31°-10' E 358.46' full 0.09' E.

(Level to 243.2'

+ 94.26 (100' @ 19°-30')

21.

358.46

(357.4 calc.)

∴ Hub 243.2 = 47' above water.

July 14th '37 Partly Overcast.

Hall - M^cCaughn - Jerdec

N 80°-10' E on line bet $\frac{13}{14}$

323.72 R at brow 5' hi

+ 98. (100' @ 11°-30')

10.6

432.3 To lot stake full .9' ft. S. = 0.09'

433.8 record.

= .67' correct
@ 323.7

∴ Sta. 323.7 = 36½' above lake.

Set 2 Iron Pipes (Flush) at A.P. 1500' rear line

(2")

+ 258

= $\frac{15}{14}$

+ $\frac{18}{17}$

July 14th Continued

Meas. Course we called N 83° 34' W 396.

394.3'

-396

$$1.7' \text{ Short} \div 396 = .00429 \times 66 = .28$$

$$" \times 176 = .76$$

$$" \times 286 = 1.23$$

Set stakes on said Pro-rate.

$$\angle \text{Sto W @ } 1500 + 250 = 103 = 31'$$

$$\therefore \text{Course} = \text{N } 83^\circ 49' \text{ W.}$$

Map "had to be in" by July 10th.

Calc. these dist. before all checks were made.

Run N 29° 41' E bet. $\frac{22}{21}$ by \angle off $\frac{1}{4}$ line.

A.P. brs. S 83° 49' E

@ 279.8 Hub at brow of hill

89.9 (100 @ 25° 56')

369.7

+ 39

408.7 fall 1.72' Ely = 0° 15'

408.0 calc.

\therefore Correct 1.18 W. @ 279.8

" = 46' above water

July 16th '37 Fair 70°

Hall, Mc Caughn - Jerdee

Misread 21° 07' as 20° 07' - 15'

& fell 6.9' wly. at shore.

$$\begin{array}{r} 21 \ 07 \\ 20 \ 56 \\ \hline 0 \ 11 \end{array}$$

July 19th '37 Fair 75°

Hall & Jerdee

Set reinforced concrete Mon.

Cylindrical, 5" x 36" at MC. on.

N + S $\frac{1}{4}$ line (Flush)Plant similar man at E to W $\frac{1}{4}$ line MC.

2" exposed. Meas. 25.1' from hub.

Drive 2" J.P. (4" exposed) 375' wly of

MC on E to W $\frac{1}{4}$ line. (173.6 W of hub 2023.6

Offset W. (N 89° 30' W) 20' + run South.

361.1 Intersect $\frac{1}{4}$ lot 30 126.1 NW of SW 29

(360.7 calc.) (126.6 calc.)

@ 105.8 at \angle E 20 for P.C.

@ 256 " " " " "

@ 20.8 (S 74° E) of Intersectn turn N 53° E 36.9
set ext.

Set Center of Curve + P.C.s on curve
lines Lot 30 + 29

SE line St. = $10^{\circ}C$.

NW " " = $10^{\circ}58'C$. T. 96.4

Does not fit existing sleigh road
at upper end. Had not enough
detail at time tracing was made.

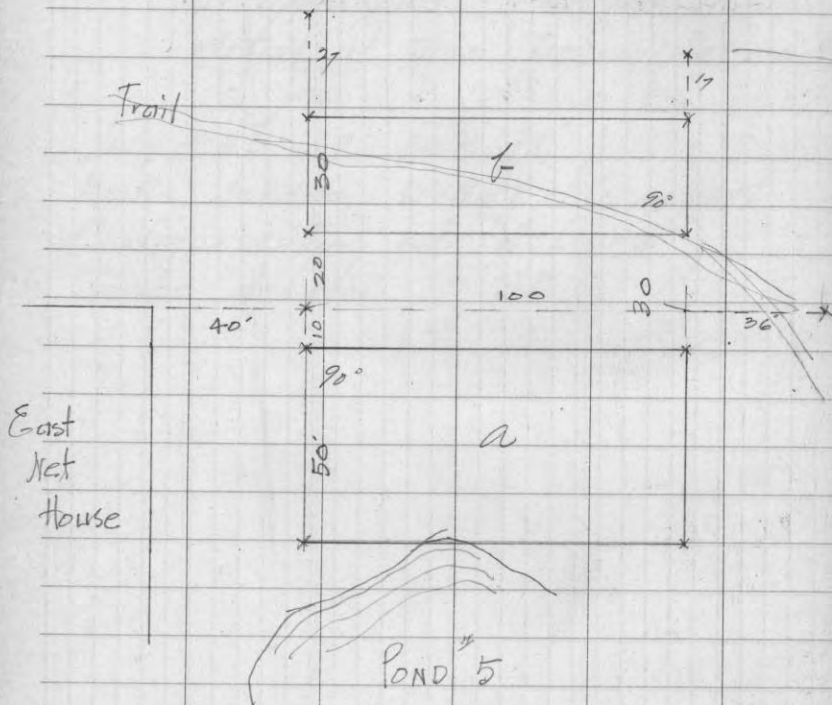
July 23^d '37 Fair 75°

Hall, Jerdec, Wollock - Quasbart.

Continue cutting out Lot Lines.

Savee delivers	75	D.P.	1"
	4	" "	2"

8-39-7

Woodruff Hatchery
New Bldgs.Aug. 2nd 1937 Raining 75°
Set trial stakes as below:

Set Stakes near each of above bldg. corners
with top to level of E. net House floor
or an even ft. or 2' below to.

Aug 13th '37 AM fair.
Hall + McLaughlin.

Begin re-staking to agree with location
as decided on:

Lines a + b N. 10° do 4 a
coincides with 4 Net House.

Change to read be 13' N. of N.E. corner altered
location.

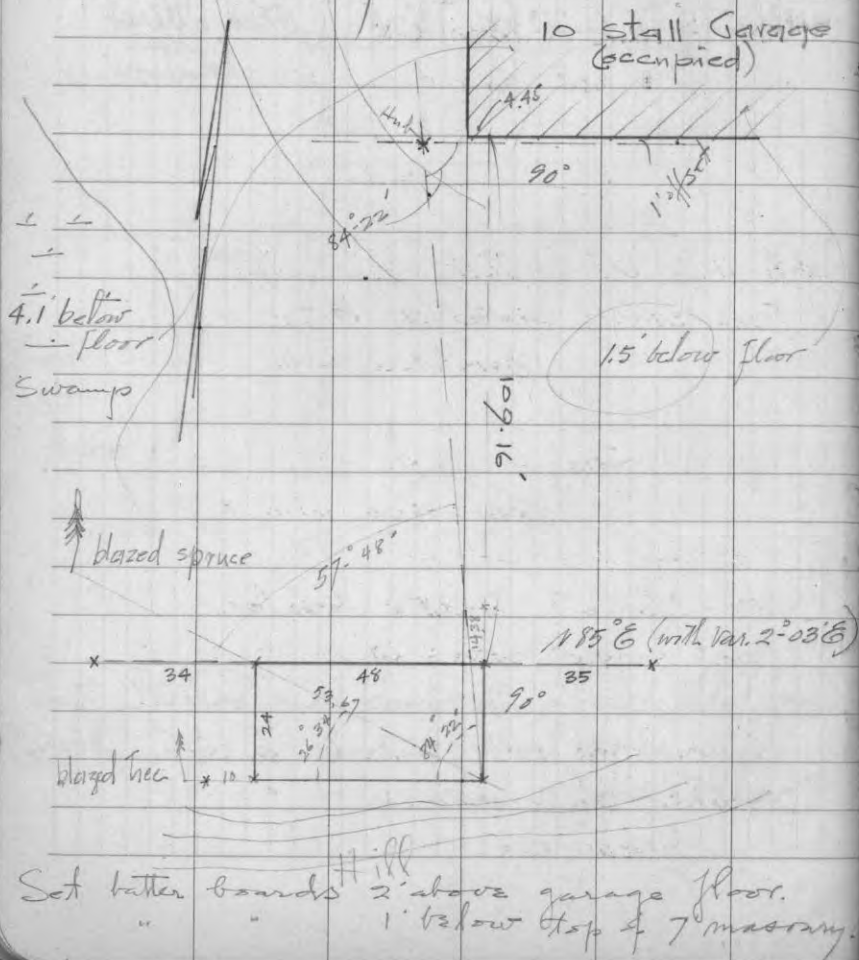
54

8-39-7

Hatchery - Mess Hall

Aug 10th '37 fair 80°

Hall - Trainor - M & Coughlin PM only.
 locate proposed 24 x 48 structure
 as far S. as bank permits - in such
 manner that when natural slope
 of bank is preserved it will not come
 above masonry.



Targets for Aerial Survey

55

38-5 E.

Oct 7th '37 PM Hall + Hassler
 Set single cross 3 x 20 (Cardinal orientation)
 2 ch. (132') W of Orig. SE x 34
 (on picket line).

Set single cross 1.75' E and 16.5' S
 of orig. SW cor. Sec 31 (Twp. cor.)

Post found checks OK with Buch (orig.)
 var. of " new Spruce 8" N 27 W .338 ch.
 P.C. mark " Cedar 6" N 87 W .54

Oct. 11th '37 Hall, Schaller, J. E. Trainor
 Set single cross at Orig. 1/4 S. 4#19
 oriented with meridian.

Set single cross at Orig. 1/4 on 4#7
 oriented with meridian

Oct. 12th '37 Hall + Hassler.
 Set single cross at Orig. cor. 25-26-35-36
 oriented with Meridian.
 (Identified by H.C. Hall's post - set from
 orig. P.T. in 1933)

New Bireg
 1/2 y. Pine 3" S 24° W 1.058 ch.
 3/3

Aerial Survey.

38-5 E

Oct 12th '37 with Hassler.

Set single cross at orig. 1/4 on E 36

Oriented with meridian

Set new Tam. post at record course

+ dist. From both orig. b'gs ✓

New } N. Pine 14" N 66° E .229 ch.

var. } N. " 5" S 32° E .391

N. " 3 S 71° W .56
251Oct 9th '37 with Pete Brown

Set single cross at Orig. NW x Sec 6

(Twp. Cr.) oriented with Meridian

Country Monument. Pitch post

Identified by R.H. Hall 1933

Pace N. to Lake 322 steps.

Oct 13th '37 with Schaller.

Set single cross at Orig. NE x Sec 1

(Twp Cr.) Identified + marked by

R.H. Hall 1933. R.R. Rail + B.T.

Oriented with Meridian

Set single cross at Orig. NW x Sec. 4

Oriented with Meridian.

cor. identified + marked by post 1933

Aerial Survey

39-4 E.

Oct. 8th '37 Hall + Hassler(Came N. about 124 ch., paced, from
Orig. x 4-5-8-9 in 38-4) and set new
post at record course + dist. from
stub of orig Tam. (marks OK). Other
b'g rotted down to the mass.

New: { Spruce 6" N 31° W .326

var. 0° { " 6" S 78° E .42

Set single cross at cor. oriented N-S-E-W

Also perpetuated Orig 1/4 bet. 29 & 32

Set new Tam. post in place of old
stake agreeing with stps. of both
orig. b'gs. Marks on S. b'g only.

New " { Spruce 5" N 76° E 1.27 ch.

var. { " 3" N 25° E 1.103

0° { Tam. stb. 5" N 73° W .379

Did not set Target.

All open marsh

10
Orig 1/4 32 + 33

Aerial Survey

38-4 E.

Oct. 8th '37 with Hassler.

Set new post in place of old one

Found for cor. Secs. 4-5-8-9

" Agreeing with Orig. SW BT. marks OK

New: } Tam 3" N46 E .512 ch.

var 0' } " 3" S82 E 1.496

Open Swamps

Set single cross at cor. oriented
with meridian.Oct. 16th '37 Hall + Hassler.

Set post for Orig. MC. North shore

Boatjack L. between Secs 8 & 9.

Two W. Pines 12", one down, bear
perfect bearings - no. scribe marks.

One birch N 24 W .115 ch. from other

A 10" Hem. grew where facing
point. So we set post as near
stp. as boulders permit.

Orig. Pine N 2 W .095 ch.

var 0' } " " S 87 E .036

New: W. Birch 3" N 21 W .19

" " " 4" S 35 W .127

Shore birch. S 50 W rounding

" " N 11 E 2 1/2 ch into bay

Th. E NE

No Target

Aerial Survey

38-4 E

Adamzuk

Oct 11th '37 with Schaller

Set new Term. post for Orig MC.

on west shore. \$ Sec 33.

(U.S. Record = 44.20 W of SE -)

Set by record course + dist. from

Orig. NE Apruce - broken off - marks OK

" SE " can not be found.

New: } Tam. 5" N 29 W .979 ch.

var 0' } " 6" S 78 W .703

Set single cross at MC. oriented

45° off meridian

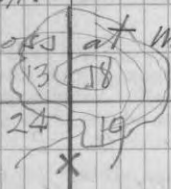
39-5 E.

Oct. 15th '37 with Schaller.

Orig. W.C. (Record = 3 ch. E. of NW 19)

13 Identified by stub of SW Png 1935 +

Iron pipe set. " " still OK.

Single cross at W.C. oriented 45° off
meridian.

Orig. 1/4 C. between Secs. 27 + 28

14 Auto Axle for cor.

Single cross at cor. oriented

N. S. E. - W

Aerial Survey

38-6 E.

Oct. 12th '37 with Hassler
Cor. to Secs. 28-29-32-33Identified by Orig. south BT
head; facing N 25 W ±No evidence of post or other BT
if notes are taken literally.There is very old post facing 137
+ agreeing closely with stp. of
possible other bing. Set new
post in place of old one.

15	0°	Origl.	S 24 E	.244
		" ?	N 78 E	.18
		New Spruce	S 84 E	.371
		"	S 12 W	.196

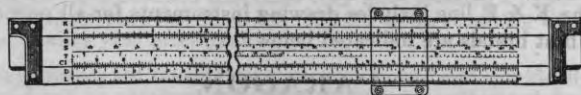
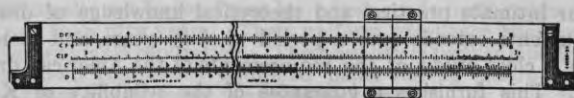
Set single cross 9' E of post
oriented N-S-E-W

Orig 1/4 S. on § Sec. 34

V. M. Maine's capped monument
+ post. Agreeing with stp. of origl.Set single cross at post
oriented N-S-E-W.

This is 3 or 4 ch. ± W of new 51

K & E SLIDE RULES.



The slide rule is an instrument for solving arithmetical, algebraical and trigonometrical problems without mental strain and in a small fraction of the time required to work them out by the usual long-hand methods. Anyone who has a knowledge of decimal fractions can learn to use the slide rule in a very short time.

K & E Slide Rules, made in our factory at Hoboken, N. J., are unsurpassed in accuracy, permanency and legibility. They have features, not found in other slide rules, which make for continued accuracy and convenience.

A variety of different rules enable a prospective user to select one most suitable for his purpose, at least expense.

The **BEGINNERS' Slide Rule** is intended for those who desire to become familiar with the possibilities of the slide rule at little expense.

The **POLYPHASE Slide Rule** is suitable for a great variety of purposes, including the solution of problems involving squares and square roots, cubes and cube roots, trigonometrical functions and common logarithms.

The **POLYPHASE DUPLEX Slide Rule** has all the scales of the Polyphase Slide Rule, with the addition of folded scales which facilitate the handling of certain factors in computation.

The **LOG LOG DUPLEX Slide Rule** has all the scales of the Polyphase Duplex Slide Rule with the addition of scales by which problems involving hyperbolic logarithms and any power or root are rapidly solved.

The **LOG LOG DECITRIG Slide Rule** has all the scales of the Log Log Duplex Slide Rule, but with the trigonometrical scales re-arranged, expanded, and decimally divided. Vector problems, important in Electrical Engineering work, can be solved with one setting of the slide.

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In addition to the general purpose slide rules, the K & E line includes slide rules of more special character for the Surveyor, Chemist, Electrician, etc.

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