

BOOK 101.

Field Notes, Surveys, etc.

Cass County, Minnesota.

1915.

MINING
TRANSIT BOOK
363

John W. Curo,
County Surveyor.

Index.

1

Survey.

Page.

20-142-31-Walker.

3-89

Filed

Saturday March 20th 1915. Lr
Minneapolis 9:05 A.M. via
N. P. Ry. to work for Jno. W. Curo,
County Surveyor of Cass County.
Railroad fare \$3.80.

Arrive Walker 4:57 P.M.
Registered Hotel Chase, Room 18.
Reported at Curo's office at 5:30
P.M. Mch. 20th.

Sunday March 21st 1915.
All day at Hotel Chase, Walker.
Met Curo & Gorman at the
office & read Govt. field notes.

Geosomiller.

①

327 3

Sec. 20-142-31. Warner.

Monday March 22nd 1915.

We start the survey of Sec. 20. M. D. Gorman & I go to $\frac{1}{4}$ Cor. S. side Sec. 20 where we meet John Gaebel and Mike Bucick who arrive at 11:30 a.m. Ate lunch here.

At this point, being $\frac{1}{4}$ Cor. Btw. Secs. 20-29-142-31. H. S. notes call for post and the following bearing trees; (L-V @ 5)

W. P. 48 North 40 lks. = 26.40 ft.

" " 30 S 19 E 13 lks. = 8.58 "

We find the stumps of both ^{old} B-Ts. plainly marked and a R.R. spike set by Curo for the true $\frac{1}{4}$ Cor. from which West on bar. go E.

@ 233.10 - Hub

@ 769 - Passed 2 ft. n. of what appears to be line tree, being 14 in. oak blazed on E & W sides.

@ 825 - N & S wagon Road.

@ 1281.25 - Hub

@ 1531.50 - Hub

Gro. v. Miller 327

4 327

20-142-31 - wacker. ②

@ 1778.40 - Hub.

@ 2115.00 - Hub.

Gorman & Goebel leave for town about 2 P.M. Bucick & I remain in the field till 5 P.M. Chaining done by Gorman and I until 2 P.M. after which Bucick & I chained. Used 100 ft. steel tape and plumb bob. Also transit used & all hubs double centered. Quit for night. Gorman & I staying at Hotel Chase.

Brown Miller.

327

Survey of Sec. 20-142-31. March 1915.

Total.

20-142-31, Wacker. 327

(3)

	21	22	23	24	25	26	27	28	29	30	31	
	Sun						Sun					
Growmiller.	0	1	1	1	1	1	1	1	1	1	1	10 days-
N. D. Harman.	0	1	0	0	0	0	0	0	0	0	0	1
J. O. W. Carr.	0	0	1	0	0	0	1	1	1	0	1	5
John Goodel.	0	1	0	0	0	0	0	0	0	0	0	1
Mike Bucick.	0	1	1	1	1	1	0	0	0	0	0	5
Charles Warren.	0	0	1	1	1	1	0	0	0	0	0	4
Cyrus Fick.	0	0	1	1	0	0	0	0	0	0	0	2
Sam Wells.	0	1	0	0	1	1	0	0	0	0	0	3
Frank Bredder.	0	0	0	0	0	0	0	0	1	1	0	2
Frank A. Conner.	0	0	0	0	0	0	0	0	1	1	1	3
Mitchell Ellis.	0	0	0	0	0	0	0	0	1	1	1	3
Fred Buttiker.	0	0	0	0	0	0	0	0	0	0	1	1
John McElorin.	0	0	0	0	0	0	0	0	0	0	1	1
John Muckovis.	0	0	0	0	0	0	0	0	0	0	1	1
Albert Erickson.	0	0	0	0	0	0	0	0	0	0	1	1

327

6

327

④ 20-142-31-Walker.

Tuesday March 23rd, 1915.
Gorman goes to Hackensack
on 9:35 train to survey of
Sec. 36-141-31.

Gro.w.miller. Transit & chain.
Mike Bucick. Chain & axe.
Charles Warren. Axe.
August Fix. Axe

Beg. at hub 2115.00, continued
west

@ 2376.30 - Hub.

@ 2615.00 the cor. to Secs.
19-20-29-30 set S. 16 ft.

At this point H.S. notes call
for post & the following B.Ts:

Poplar 4, N 85 E, 12 lks. = 7.92 ft.

" 3, N 33 W, 28 " = 18.48 "

B. oak 3, S 47 W, 10 " = 6.60 "

Poplar 6, S 17 E, 23 " = 16.18 "

We find stake previously es-
tablished by Gro.w. curs. set
from the old B.T. stumps and
new bearings as follows:

327

Gro.w.miller.

Survey of Sec. 20-142-31, Continued April 1915.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Grossmiller	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
on notes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
on notes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
on notes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mitchell Ellis	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Fred Bettcher	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
John De Florin	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
John Moskow	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Walter Lee	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
J. W. Prettyman	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

⑤ 20-142-31 - walking
327

8

327

⑥

20-142-31-walker.

walking back to the $\frac{1}{4}$ Cor. betw.
20-29-142-31, backsighted on
Random west & run East.

@ 106.70 - Hub.

@ 856.80 - Hub.

@ 1134.60 - Hub.

@ 1344.20 - Hub.

@ 1691.20 - Hub. Tack in Oak [stump.

@ 2000.00 - Hub.

@ 2566.00 the Cor. to Secs.
20-21-28-29 set S. 3.20 ft. At this
point U.S. notes call for the
following B. Ts:

Poplar 5, $71^{\circ} 77' E$, 12 lbs. = 7.92 ft.

" 3, $71^{\circ} 27' W$, 12 " = 7.92 "

B. Oak 5, $S 80^{\circ} W$, 7 " = 4.42 "

Birch 4, $S 54^{\circ} E$, 23 " = 16.18 "

We find an old stake set by Curo
for the true Cor. set from the
stumps of old B. Ts. with new
bearings as follows:

327

Gronmiller.

(7)
20-142-31- wacke 327 9

Coming back to the $\frac{1}{4}$ Cor. Betw.
20-29-142-31, turned 90° from
random and run north.

@ 156.40 - Hub.

@ 574.80 - Hub.

@ 904.40 - Hub.

@ 1245.00 - Hub. Tack in Pop [stump]

100 ft. Steel Tape. Aloe Transit.

Quit for night.

Still at Hotel Chase.

Geowmiller.

327

20-142-31 - Walker.

Wednesday March 24th 1915.

Curo & I go to the M. & I. depot where I present baggage check # 91416 and get Alve transit tripod which has been lost in transit from Walker to Staples.

Gro. W. Miller. Transit & Chain.

Mike Bucisk. Axe & Chain.

Charles Warren. Axe.

August Fix. Axe.

Go with Albert Erickson, who guides me to Cor. of Secs. 16-17-20-21. where U.S. notes call for a post and the following B. Ts:

Birch 3, N 60 E, 6 lks. = 3.96 ft.

Poplar 3, N 30 W, 10 " = 6.60 "

" 3, S 40 W, 4 " = 2.64 "

" 3, S 38 E, 3 " = 1.98 "

We find a large galvanized iron car. previously established by Curo - set from the old B. Ts., with new bearings as follows:

(9)

327

11

20-142-31- Walker -

Norway Pine b, N 15° 30' W, 54.96 ft.

" " 14, S 63 W, 43.18 " to

head of nails driven in flat spot
at base of trees. Var. 9°I go a mile SW where I find the
crew and we come back to the
cor. of sec. 16-17-20-21-142-31 and
run south. Var 18° E.

@ 268.70 - Hub.

@ 406.50 - Hub.

@ 646.30 - "

@ 766.30 - "

@ 1180.75 - "

@ 1460.55 - "

@ 1470 - passed 4 ft. East of what
appears to be a line tree, being 18 in.
Jack Pine, blazed on N & S sides.

@ 1721.40 - Hub.

@ 2022.60 - "

@ 2462.00 - " - @ 2334 - old Road

@ 2615.40 - " on highest hill. [NW & SE.

@ 2775.50 - "

200 ft. Steel Tape. Also transit.

Quit for night.

Still at Hotel Chase.

Geo. W. Miller.

327

12

327

⑩

20-142-31 - Walker.

Thursday March 25th, 1915.

Fair & Cold.

Groom Miller - Transit & chain -

Mike Bucick - Axe & chain.

Charles Wannen - Axe.

Sam Wells - Axe.

200 ft. Steel Tape - Also Transit.

From Hub 2770.70, continue South.

@ 3484.00 - Hub.

@ 3493 - E & W State Road.

@ 3744.30 - Hub.

@ 4055.80 - "

@ 4307.50 - "

@ 4557.00 - "

@ 4931.50 - "

@ 5142.70 - "

@ 5443.00 - "

@ 5522.80 - "

@ 5889.30 - "

@ 5953 - Cross old line fence,
bears N & S.

@ 6393.70 - Hub.

@ 6760.20 - Cor. Site W. (90°) 142.70 ft.

@ 7115.80 - Cor. Site W. (90°) 142.70 ft.

@ 7136.00 - Intersect random line

from W. 3.2 ft. N & 144.00 ft. E. of Cor.

327

Groom Miller.

(11)

327

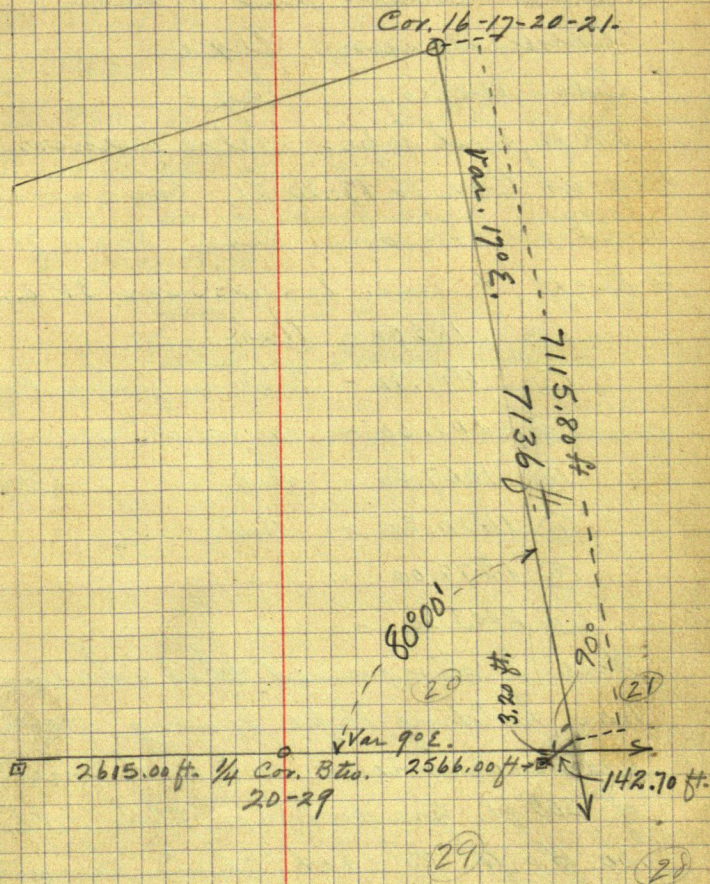
13

20-142-31-Walker-

Took angle of the lines--reads 80°

Quit for night.

Still at Hotel Chase



Grawmiller -

327

20-142-31- Walker.

Friday March 26th 1915.

Geo. W. Miller. Transit & Chain.

Mike Bucick. Axe & Chain.

Charles Warren. Axe.

Sam Wells. Axe.

200 ft. Steel Tape. Also Transit.

Beg at Cor. 16-17-20-21, backright.

South on random line, turn $76^{\circ}30'$
to Right & run west. Var. $31^{\circ}E$.

@ 185.50 - Hub.

@ 407.70 - Jack in fallen Poplar.

@ 805.30 - " " " "

@ 1067.50 - Hub.

@ 1410.50 - Hub.

@ 1577.00 - "

@ 2003.20 - "

Here I discovered that chainman was holding Tape wrong, marking measurement at end instead of 200 ft. graduation, thus adding .50 of a ft. to each chain length.

Proportion - $\frac{200.5}{200.0} = \frac{2003.2}{x}$. from which proportion, I determine that correct measure to hub recorded

(13)

327

15

20-142-31- Walker -
as 2003.20 = 1998.20 - Hub.

@ 2477.70 - Hub.

@ 2665.50 - "

@ 3304.80 - "

@ 3602.60 - "

@ 3721.30 - " Jack in Burnt Stump

@ 4246.00 - "

@ 4435.00 - intersect near
Cor. to 17-18-19-20.

Quit for night.

Still at Hotel Chase.

Laid off crew to figure necessary
notes.

Gro. Miller

327

16

327

(14)

20-142-31- Waackner-
Saturday March 27th, 1915.

Work all day in office on notes,
assisted by Curo.

Still at Hotel Chase.

Sunday March 28th, 1915.

Curo & I work on plat of
Sec. 20-142-31. Look up old
field notes of previous surveys
and copy old U.S. notes, check
Govt. plats, etc.

Still at Hotel Chase.

327

Gronmiller.

(15)

327 17

20-142-31- walkin.

Monday, March 29th, 1915.

We are unable to get a crew as the saw mill starts up today and my old crew are employed therein.

Following Curo's instructions, I ride out with Frank Bruce to the Chase farm near the $\frac{1}{4}$ Cor. Betw. 19-20-142-31. Arrive 9:20 A.M. Mitchell Ellis and I walk to $\frac{1}{4}$ Cor. betw. 20-29 and check-chain the whole mile, E & W. on S. line of Sec. 20.

P.M.

Set transit on $\frac{1}{4}$ Cor. Betw. 20-29, backsight west on random line, turn telescope $84^{\circ}30'$ to the Right, and run a new line North.
Var. $14^{\circ}30'$ E.

@ 164.10 - Hub.

Curo & Donner walk out in the morning and run a compass line N & S betw. Secs. 20-21-142-31 and search for

Grousmiller - 327

20-142-31-walker.

old $\frac{1}{4}$ cor. Betw. 20-21. where U. S. notes call for a post and the following B. Ls:

Poplar 3, N19W, 17 lks. = 11.22 ft.

Poplar 3, N89E, 3 " = 1.98 ft.

At a point on my transit line 3653.70 ft. S. of the iron N.E. cor.

Sec. 20 and at 90° angle to the transit line an old fence corner sets E. 283.10 ft. From this fence cor. an old line of fence posts runs easterly and an old wire fence runs south on about 7° var. to the S.E. cor. of Sec. 20. To preserve this point Cuss & Donner cut off the cor. post of fence, drove a nail in part of post left in the ground and in order to preserve this as a reference point, mark the following bearings:

W.P. Stump 36, S $18^\circ 09' E$, 43.85 ft.

" " " 42, S $69^\circ 47' W$, 24.30 "

to head of 60d spike driven in flat spot at base of stump.

Var. 17°

Geo. W. Miller.

(17) 20-142-31-Walker 19
P. M. 327

Curo & Donner walk to the Chase farm where they get Frank Breece and walk to the N.W. Cor. Sec. 20, being the Cor. to Secs. 17-18-19-20-142-31, where U.S. notes call for a post and the following B. Is.

Poplar 3, N55E, 7 sks. = 4.62 ft.

" 3, N43W, 26 " = 17.16 "

" 3, S25W, 5 " = 3.30 "

" 3, S30E, 10 " = 6.60 "

On account of wood-chopping & logging operations, the B. Is. at this point have been cut down and the stake knocked down, but on account of the old blazed Sec. lines running to an intersection at this point, Curo & Breece are able to re-establish the cor. at the point where they remember its once having stood, at which point they drive a 60d spike in the ground, from which the stumps which appear to have been the old B. Is., check out

L. Brown, Miller 327

20

327

(18)

20-142-31- Walker.

for course & measurement.

Quit for night.

Donner & I still at Hotel Chase.

Curo boarding with Erickson.

Donner & Curo use a 75 ft.

metallic tape & Gurley compass.

I use a 300 ft. Steel Tape and

Also transit.

327

Geo. W. Miller.

(19)

327 121

20-142-31 - walk -

Tuesday March 30th, 1915.

In order to rush this work to completion we work two crews again today. Frank Donner & Frank Breece in one crew with H & B Transit & 200 ft. Steel Tape, Gro.w. Miller & Mitchell Ellis make up the other crew. I use Alae Transit and 300 ft. Steel Tape -

I leave hotel at 7:30 A.M. & walk walk to $\frac{1}{4}$ Cor. betw. 20-29-142-31. Set transit over spike at true $\frac{1}{4}$ cor., backsight west on random line, turn $84^{\circ}30'$ Right & run new line north.

@ 164.10 - Hub.

@ 649.80 - "

@ 949.00 - "

@ 1174.10 - "

@ 1426.40 - "

@ 1747.60 - "

@ 1973.00 - "

@ 2245.20 - "

@ 2510.80 - "

Gro.w. Miller.

327 1

20-142-31 - Walker -

Donner & Breece go to the
 $\frac{1}{4}$ Cor. betw. Secs. 19-20-142-31
 where U.S. notes call for a
 post & the following B. Is:

J. Pine 12, N50E, 15 lks. = 9.90 ft.

Poplar 5, N38W, 10 " = 6.60 "

At this point County Surveyor Curo
 and Frank Breece have estab-
 lished the $\frac{1}{4}$ Cor. from the old
 B. Is. In establishing this
 cor. Breece & Curo found an
 iron pin previously set by
 County Surveyor Canfield
 which checks out with the stump
 of the old J. Pine B.I. and from
 the cor. Curo & Breece set new
 bearings as follows:

From this point Breece & Donner
 chain N. along the true line
 following a line of fence.

@ 1320.00 set spike on true line
 over which they set the transit,

(21)

20-142-31- Walker - 327²⁴
 backsight S. on $\frac{1}{4}$ Cor. & run N
 intersecting the spike at N.W.
 Cor. of Sec. 20, and find the
 total length of line 2654.90 ft.
 Donner sets transit over spike
 at the true cor. to Secs. 17-18-19-20
 -142-31 and marks new bear-
 ings as follows:

Aspen Stump 10, S47°58'E, 9.50 ft.

" " 12, S64°07'W, 13.30 "

to nail head in flat spot at base
 of stumps. V8° This half mile of
 line just run runs on V8°E.

Donner & Breece then wack
 to a point on my transit line
 1827.80 ft. S. of the N.E. Cor. of
 Sec. 20-142-31 where they set a
 small hub, turned 90° from
 the transit line and chain E.
 139.25 ft. where they set a
 stake which they consider
 may be the $\frac{1}{16}$ cor. but they
 are wrong as this $\frac{1}{16}$ cor. would
 not come at this point.

Quit. for night. 327
 Donner & I still at Hotel Chase.
 Brown Miller.

327

20-142-31 - Walker -

Wednesday March 31st, 1915.

In order to rush the work still more, we work three crews. John W. Curo & Albert Erickson - Gurley compass & 200 ft. Steel Tape work in one crew. Frank A. Donner, Fred Bettcher and John Moskow work in another crew. H & B transit; no chain. Grown Miller, Mitchell Ellis and John De Floin make up the third crew using Alce transit and 300 ft. Steel Tape. Double center all hubs use plumb bobs in chaining, as we have since the beginning of survey.

Grown Miller & crew begin at hub 2510.80 and cont. N. through center of Sec. 20-142-31.

@ 2675.80 - Hub.

@ 3030.40 - "

@ 3445 - State road. SE & NW.

@ 3610.60 - Hub

327

Grown Miller -

20-142-31 - Walker -

@ 3911.50 - Hub.

@ 4342.60 - ..

Regular jungle.

@ 4884.00 - Hub.

@ 5913.50 - ..

Frank A. Donner & crew go to the $\frac{1}{4}$ cor. on W. side of Sec. 20-142-31, where on acct. of the fence he was unable to set the transit on the true corner and he sets up on true line about 8 ft. S. of $\frac{1}{4}$ Cor., backsights N. on true line, turns telescope 80° to the Rt. & runs E. through about center of Sec. 20. He runs a mile E. without chaining intersecting 17.73 feet south of the old fence corner near the $\frac{1}{4}$ cor. on E. side of Sec. 20. Donner's crew did not get started till about 9 o'clock as John Goedel furnished the crew and was

Gro. W. Miller - 327

27

327

(24)

20-142-31 - Walker -
unable to find axes.

Curo & Erickson begin at
the N.E. Cor. Sec. 20-142-31 and
check-chain my transit line
S. which runs on variation
of 18° E.

@ 1827.80 they find small
hub set on true ^{random} line by Donner
from which a temporary $\frac{1}{16}$ Cor.
set by Donner bears East. (90°
to Transit line) 139.25 ft. This is
not the true $\frac{1}{16}$ Cor.

@ 3653.70 they find hub
set by Donner on true ^{random} line
from which nail in point of
old corner post of fence
bears East. (90° to Transit line)
283.10 ft.

@ 7115.80 the cor. to Secs.
20-21-28-29-142-31 bears West
(90° to Transit line) 142.70 ft.

Curo & Erickson then go
to the $\frac{1}{4}$ Cor. on west side

327

Brownmill.

(25)

327

28

20-142-31- walku.

of Sec. 20 where the check-chain
the half mile of line north
and find it correct as
previously chained by
Donner & Breece. Curo
& Erickson use 200 ft. Steel
Tape & two heavy plumb-bobs,
chaining perfectly.

Quit for night.

Curo still boarding with
Erickson. I still remain at
Hotel Chase. Donner quits
and takes midnight train
to Glencoe, Minn. where he
is to be gone a week.

G. W. Miller

327

29

327

(26)

20-142-31- Walker.
Thursday April 1st, 1915.
Cloudy.

Seeing that it is impossible to finish the survey of Sec. 20-142-31 before the Commission's Meeting which is to take place April 6th, we only work one crew.

Along Transit, 300 ft. Steel Tape.

Gro. W. Miller, Transit & chain.

Mitchell Ellis, Axe & chain

John Moskow, Axe.

Walter Lee, "

Fred Bettcher, "

John De Florin, "

Set over hub 5913.50 & cont. N. through center of Sec. 20.

@ 6157.40 - the true $\frac{1}{4}$ cor.

betw. Secs. 17-20 sets East 23.40 ft. (90° to transit line.)

Following Curd's instructions, I now proceed to

327

Gro. W. Miller.

(27)

327

30

20-142-31- Walker.

Cor. of Secs. 17-18-19-20-142-31
and measure Right Angle
offset between Cor. post &
random line, finding
same to be 14.38 ft.

We then follow the west
boundary of Sec. 20 - one
fourth of a mile South to a
spike on true line 1320 ft.
N. of the $\frac{1}{4}$ Cor. betw. Secs. 19-20.
Set up on spike, backsight a
quarter of a mile South and
measure North 7.45 ft to a
point 1327.45 North at which
point I drive a spike for
the true North $\frac{1}{4}$ Cor. betw.
Secs. 19-20-142-31 over which
I set transit and again
back one fourth mile South
on the $\frac{1}{4}$ Cor., turn Telescope
100° to the left & run East-
random line through
the center of N. half Sec. 20.
not chaining. Ran about

Pro. w. mile - 327

31

827

(28)

20-142-31- Walker.

 $\frac{7}{8}$ mile & quit for night.

Supper at Hotel Chase.

Curo & I work nearly all night on notes & calculations of this survey.

These notes have been submitted daily to John W. Curo and checked over by him.

327

Geo. W. Miller.

(29)

327

32

Good 20-142-31-Walker-
Friday April 2nd 1915.

Fair & warm.

Geo. W. Miller. Transit

Mitchell Ellis. Axe-

Fred Butcher. "

John Moskow. "

Walter Fee. "

Used Abbe Transit in perf. adj.

Begin at the S. $\frac{1}{2}$ Cor. betw.

Secs. 19-20-142-31, backsight n.
on corrected hub # 1593 n.

previously established by

Curse on the true line, turn

$85^{\circ}25'$ to the Right & run East.

not chaining. Air very heat-wavy.

Taking fairly long sights.

Timber heavy & thick & progress
slow.

John Goebel appears at about

2:30 P.M. & asked a few

questions which I answered.

Run very nearly to the East

line of Sec. 20 & quit for

supper. Still at Hotel Chase.

Geo. W. Miller

327

20-142-31- Walker.

Note- At about 3 o'clock P. M.

I noticed a small bush-fire burning about $\frac{1}{4}$ mile N.W. of line we were surveying. I called Mitchell Ellis back to the transit & pointed it out to him. It was in a part of the section which none of my party have traversed today.

After supper Curo & I work in the office on notes & calculations of this survey.

Curo went to Ten Mile Lake & back today to assist N.D. Gorman in calculations of sub-division of Sec. 36-141-31.

(31)

327 1 34

20-142-31-Walker.

Saturday April 3rd 1915.

Fair & windy.

Gro. W. Miller. Transit.

Mitchell Ellis. Axe.

Walter Fee. "

Fred Bittaker. "

Aloe transit.

Cont. East on random line through center of S. half of Sec. 20-142-31. Intersect E. side of Sec. 20 at about 10:30 A. M. then wack to the N. $\frac{1}{16}$ Cor. betw. Secs. 19-20, where we set up transit, backsight S. on $\frac{1}{4}$ Cor. & turned telescope to left $106^{\circ}20'$ & run East, cutting new random line through center of N. half of Sec. 20. Not chaining. Run a few hundred ft. East of N & S center line of Sec.

In establishing the S. $\frac{1}{16}$ Corner betw. Secs. 19-20-142-31, we retrage old line run

Gro. W. Miller 327

35

(32)

327 20-142-31- Walker -
by Curo, whose notes read
as follows:

Beg. at the cor. to Secs.
19-20-29-30-142-31, run N.
Var. $7^{\circ}50' E$.

@	300	Stake.
@	490.20	Hub.
@	600	Stake - [NW + SE.
@	839	- Cross old logging road.
@	900	Stake.
@	1113.00	Hub.
@	1200	Stake - [NW + SE.
@	1290	- Cross old road grade.
@	1320	- Hub. temp it
@	1500	Stake
@	1593.00	Hub.
@	1800	Stake
@	2100	"
@	2377.00	Hub.
@	2400	Stake
@	2597.80	- the true $\frac{1}{4}$ Cor.

Betw. Secs. 19-20 sets East 4.50 ft.

Correcting: 1 ft goes E. .0017 ft.

327

John W Curo
Gro. Miller

(33)

327 136

20-14/2-31- Walker -

2597.80 goes E. 4.50 ft.

1320.00 .. S. 21.10 to 1298.90,

thence E. 2.25 ft. at which
point we drive a spike for
the true S. $\frac{1}{16}$ Cor. Betw. Secs. 19-20

John W. Curo
Georniller -

327

37

327

(34)

Easter 20-142-31-Walker.
Sunday April 4th 1915.

I spent the day at the
Hotel Chase.

N. D. Gorman & Paul R. Boese
arrive this morning on the
3 A.M. train; N. D. Gorman
from Hackensack, Minn.,
and Paul R. Boese from
Minneapolis, Minn. Both
put in all day at the office,
making calculations and
plats of survey of Sec. 36-141-31.

Gorman roomed with me
in # 40 at the Hotel Chase &
Paul R. Boese took # 12.

327

Geo. W. Miller.

20-142-31 - Walker.

Monday April 5th 1915.

Fair & warm.

Groom Miller. Transit.

Fred Buttcher. Aye.

John Moscow. "

Walter Fee. "

300 ft. Steel tape. Aloe transit.

John Goebel sent 5 men to Hotel Chase this morning, but following Curo's instructions, I took only the 3 men above mentioned & told the others to return to Goebel's hotel, as we did not need them. Curo telephoned Goebel regarding the men.

Cont. random line East through N. half of Sec. 20-142-31, not chaining. Intersect E. side of Sec. 20 about noon. Set hub on hilltop about 100 ft. East of East boundary of Sec. 20.

Groom Miller. 327

39 327

(36)

20-142-31- Walker -
ate lunch here.

P. M.

Walk to E. $\frac{1}{16}$ Cor. betw. Secs.
20-29-142-31, where we es-
tablish the true $\frac{1}{16}$ Cor. as
follows: Set spike on
random line 1283.00 feet E.
of $\frac{1}{4}$ Cor. betw. Secs. 20-29,
backsight on random line,
turn 90° & run South 1.60 feet,
at which point we set the
true $\frac{1}{16}$ Cor. where we drive
40d spike. With transit still
setting on random spike
1283.00, backsight west on
random line, Turn $84^\circ 25'$ to
the right, Transit telescope,
line of sight intersects 0.15 ft.
East of true $\frac{1}{16}$ cor. Again
transit telescope and run
North, not chaining. Set
spike on hilltop about 200 ft.
from transit. From the
spike on hilltop we measure
West 0.15 of a foot, and set

327

Gronmiller.

20-142-31-walker.

spike on true random line,
over which we set transit,
backsight on true $\frac{1}{4}$ cor.,
transit telescope & run N-
through E. half of Sec. 20-
142-31. Ran about $\frac{1}{4}$ mile
and quit for supper.

Curo and I spend part
of night in the office
making calculations of
survey.

Still at Hotel Cham-

Growmiller -

20-142-31 - Walker.

Tuesday April 6th 1915.

Fair & warm.

Grossmiller. Transit.

Fred Bettiker. Axe.

John Moskow. "

Walter Lee. "

Aloe transit.

Left Hotel Chase at 7:30 A.M.
 Met crew on wacks & cont.
 N. on random through E. half
 of Sec. 20-142-31. Ran nearly
 to N. side of Sec. 20 & quit
 for night.

Note: Sent Walter Lee to
 Chase farm to return axe
 which we had borrowed.

Still at Hotel Chase -

(39)

327

42

20-142-31- Walker -

Wednesday April 7th 1915.

Fair & warm -

Gronmiller. Transit & chain

John Moskow. Axe & chain.

Fred Bettcher. Axe.

Walter Fee. "

Use 300 ft. Steel Tape. Also transit.

Left hotel about 7:15 a.m. Met crew on work & cont. n. on random through E. half Sec. 20-142-31. Intersect n. side of Sec. 20 about 10:30 a.m. Hub sets on n & s random on hilltop about 250 ft. S. of n. side of Sec. 20. Walked to the S. side of Sec. 20 & established the true $10\frac{1}{16}$ Cor. betw. Secs. 20-29, -142-31 as follows:

Measured 1307.50 feet W. from the $\frac{1}{4}$ Cor. betw. Secs. 20-29 and set hub on random line, over which we set the Transit, backsight E. on $\frac{1}{4}$ Cor., turn 90° to the Right, run S. 8.00 ft.

Gronmiller - 327

43

(40)

327

20-142-31-walker.
and set spike for the true
W. $\frac{1}{16}$ Cor. betw. Secs. 20-29, -142-31.
Again backsight on $\frac{1}{4}$ Cor.,
transit telescope & turn $86^{\circ}45'$
to the Right & again transit
telescope and find the line
of sight intersects 0.48 of a foot
E. of the true $\frac{1}{16}$ Cor. just set.
Again transit telescope and
run North. Set point on
hilltop about 200 ft. N. from
which I chain west 0.48 of a ft.
and set spike on true random
line, over which I set transit,
backsight on true $\frac{1}{16}$ Cor., tran-
sit telescope and run north.
through center of W. half of
Sec. 20, -142-31.

Ran about $\frac{1}{2}$ mile and quit
for night.

Curo & I make calculations
of this survey at the office
in the evening.

Still at Hotel Chase.

327

Groomer.

(41)
20-142-31 - Walker. 327 44

Thursday April 8th 1915.

Cloudy a.m. Fair & warm. P.m.

Groommiller. Transit.

Fred Bettcher. Ace.

John Moskow. "

Walter Fee. "

Alac Transit.

Left hotel at 7:15 a.m. & met crew on the work. Cont. N. on random through center of W. half Sec. 20-142-31. Intersect N. side Sec. 20 at about 4 P.m. Hub on random N & S sets about 40 feet S. of N. side of Sec. 20.

Discharged two of the crew, Fred Bettcher and Walter Fee. Told the other man, John Moskow, to leave at 7 a.m. Tomorrow for the work, where I will meet him and chain all unchained lines.

Still at hotel Chase.

Curo & I make calculations at the office after supper.

Groommiller -

327

445

(42)

327

20-142-31- Walker.

Friday April 9th 1915.

Dull & cloudy.

Gronmiller. Transit & chain.

John Moskow. Axe & chain.

300 ft. Steel Tape & also transit used.

Leave hotel at 7 a.m. and walk
to cor. of secs. 16-17-20-21-142-31. Start-
ing at this point we check-chain
west on random between secs.

17-20-142-31.

Just got nicely started
when rain started. Looks
like an all day soaker so
we came in, leaving chain
& axe at Blackburn's house near
Cor. to Secs. 16-17-20-21.

Spent afternoon at the office
making plats & calculations.

N. D. Gorman & Paul Boese left on
midnight train last; Boese to
Sylvan, Gorman to Hackensack.
Boese stops at Hackensack to
get outfit.

H. F. Baldwin arrives on 3 o'clock

327

Gronmiller.

(43)

327

46

20-142-31- Walker.

Train this morning, from
Minneapolis. Baldwin
prepares notes & camping
outfit for survey of Secs.
2-3-4-10-138-31. at Backus.

Growmiller.

327

47

327

(44)

20-142-31-Walker.

Saturday April 10th 1915.

Fair & warm.

Gronmiller. Transit & chain.

John Moskow. Ave & chain.

300 ft. Steel Tape & also transit.

Leave hotel at 7 a.m. accompanied
by John Moskow. We go to cor-
to Secs. 16-17-20-21-142-31. Start-
ing at this point we check chain
west on random betw. Secs. 17-20.

@ 185.90 we find hub which
has fallen down.

@ 409.20 - tack in fallen poplar.

@ 808.35 - " " " "

@ 1070.30 - Hub.

@ 1414.30 - "

@ 1581.00 - " which has fallen.

@ 2486.80 - Hub.

@ 2674.30 - "

@ 3079 - State Road. N & S.

@ 3307.40 - Hub.

@ 3605.00 - "

@ 4249.20 - " which has fallen.

@ 4444.60 - Cor. to Secs. 17-18-19-20-

327

Gronmiller.

(45)

48

20-142-31- Walker-

327

142-31 sets South 14.38 feet.

walked back over line and established corners as follows:

Set hub on random @ 3333.45 Set up over this hub, turned 90° from random and chained South 10.79 feet, where I set hub for true $W. \frac{1}{16}$ Cor. betw. Secs. 17-20-142-31.

Set hub on random @ 2222.30 Set up over this hub, turned 90° from random and chained South 7.19 ft., where I set hub for true $\frac{1}{4}$ Cor. betw. Secs. 17-20-142-31.

Set hub on random @ 1111.15 Set up over this hub, turned 90° from random and chained South 3.60 ft., where I set hub for true $E. \frac{1}{16}$ Cor. betw. Secs. 17-20-142-31.

To set over intermediate hubs, the correction per foot is .0032353+

Using this correction, & setting up transit & turning 90° from the random line at each hub,

Greowmiller.

327

827

20-142-31- Walker

I correct them as follows:

# 3605.00	I set South	11.66 feet.	
# 2674.30	" " "	8.65 "	
# 2486.80	" " "	8.05 "	
# 1414.30	" " "	4.58 "	
# 808.35	" " "	2.62 "	
# 409.20	" " "	1.32 "	

Over each of these corrected hubs I set a large guard stake bearing the words "True line" on their E + W faces.

I now walk South on E. side Sec. 20 and search for hub at 1827.80

(See P. 27, this book) I find none.

I get this measurement on the ground and pace East, looking for temp. $\frac{1}{16}$ cor. set previously by Donner. I find a large

birch hub, but it is not driven in the ground and there is nothing written on it to indicate what it is.

It is getting rather too late to establish the cor., so we quit for night.

Still at Hotel Chase. Geo. W. Miller.

268

(47)

327

50

20-142-31- Walker.

Sunday April 11th 1915.

Cloudy & Windy.

G. W. Miller. Transit & chain.

J. W. Prettyman. Axe & chain.

300 ft. Steel Tape and also Transit.

Leave hotel at 8:15 A.M. & walk to N. $\frac{1}{16}$ cor. betw. Secs. 19-20-142-31. Starting at this point we chain East on transit line through center of N. half Sec. 20-142-31.

@ 597.60 - Hub.

@ 896.60 - "

@ 1100 (Approx) we intersect N. & S. random through center W. half Sec. 20.

@ 1611 - State Road. N. & S.

@ 1841.50 - Hub.

@ 2255 (Approx.) we intersect N. & S. random through center of Sec. 20.

@ 2390.50 - Hub.

@ 2803.30 - "

@ 3583 (Approx) we intersect N. & S. random through center of E. half Sec. 20.

G. W. Miller.

327

51

327

(48)

20-142-31- Walker.

@ 3761.50 - Hub.

@ 4281- Old Road. SE + NW.

@ 4500- we set stake and had lunch.

P. M.

We establish the true $N. \frac{1}{16}$ Cor. betw. Secs. 20-21-142-31 as follows. We chain 1826.85 feet South from the cor. to Secs. 16-17-20-21 and set hub on random line betw. Secs. 20-21. We set up Transit over this hub, backsight on random line and turn Telescope 90° and chain East 141.55 feet, where we set hub for true $N. \frac{1}{16}$ Cor. betw. Secs. 20-21-142-31.

We now walk back to 4500 stake on random through center of N. half Sec. 20 and cont. chaining East.

@ 4721.00 - True $N. \frac{1}{16}$ Cor. betw. Secs. 20-21 Set South 24.35 feet.

Quit for supper.
Go back to Hotel Chase, where
327 Grow Miller.

(49)

327

52

20-142-31 - Walker.

I meet Frank A. Donner, who arrived on the 3 o'clock a.m. train from Glencoe, Minn. After supper Donner and I make calculations & figure notes of this survey.

Still at Hotel Chase.

Donner at Hotel Chase, Room 48.

Gronmiller.

327

53 327

(50)

20-142-31-Walker.

Monday April 12th 1915.

Fair & cool.

Grownmiller. Transit & chain.
 F. W. Prettyman. Axe & chain.
 300 ft. Steel Tape and also Transit.

Leave hotel at 7 a.m. and walk
 to Sec. 20.

We establish true $S\frac{1}{2}$ cor. betw.
 Secs. 20-21-142-31 as follows:

We chain 5384.75 feet south from
 the NE cor Sec. 20 and set hub on
 random between Secs. 20-21. We
 set up transit over this hub, back-
 sight on random line, turn Teles-
 cope 90° and chain East 70.20 feet,
 where we set a hub for the true
 $S\frac{1}{2}$ cor. betw. Secs. 20-21-142-31.

We then walk to the $S\frac{1}{2}$ cor.
 Betw. Secs. 19-20-142-31. Starting
 at this point we chain East on
 random line through about
 center of South half Sec. 20-142-31.

@ 133-Wagon Road. N & S

327

Grownmiller.

(51)

327 54

20-142-31 - Walker.

@ 225 - West side of Slough.

@ 400 - East " " "

@ 474.00 - Jack in fallen log.

@ 716.40 - Hub.

@ 1223 - (Approx) We intersect
N+S random through center of
W. half Sec. 20.

@ 1423.70 - Hub.

@ 2469 - (Approx) We intersect
N+S random through center of
Sec. 20.

@ 2545.60 - Hub.

@ 3222.60 - "

@ 3753 - (Approx) We intersect
N+S random through about center
of E. half Sec. 20.

@ 3766.30 - Hub.

@ 4800.50 - "

@ 4981.50 - "

@ 5096.50 - True $S\frac{1}{16}$ Cor. Betw.
Secs. 20-21 sets North 75.05 feet. (at 90°
from transit line.

We now walk back to $\frac{1}{4}$ Cor.
between Secs. 19-20 and find

Grovermill. 327

55

327

(52)

20-142-31- washer.

a spike driven 7.10 feet South
of the $\frac{1}{4}$ cor. on the true west
boundary of Sec. 20. Starting
at this point we chain East
through about center of Sec. 20.

@ 175- West side of Slough.

@ 455- East " " "

@ 1150- (Approx) We intersect
N+8 random through center of
W. half Sec. 20.

@ 1807.40 - Hub.

@ 2335.50 - "

@ 2343- (Approx.) We intersect
N.+S. random through center of
Sec. 20.

@ 2400- Set stake &

Quit for night.

Still at Hotel Chase.

Went up to office after supper
and worked on calculations of
this survey.

327

Grown Miller.

(53)

327 56

20-142-31- Walker.

Tuesday April 13th 1915. Fair & warm.
Brown Miller. Transit & chain.

J.W. Prettyman. Axe & chain.

300 ft. Steel Tape and also transit.

Leave hotel at 7 A.M. and walk to
W. 1/2 Cor. between Secs. 20-29-142-31.
Starting at this point we chain north
on random line through center
of W. half Sec. 20.

@ 207.60 - Hub.

@ 726.80 - "

@ 945- Wagon Road SE & NW.

@ 1383 - (Approx) we intersect
E & W random through center of South
half Sec. 20.

@ 1508.20 - Hub.

@ 1874.00 - Hub.

@ 2360 - South side of Slough.

@ 2470 - North " " "

@ 2591.20 - Hub.

@ 2790 - (Approx) we intersect
E & W random through center of Sec. 20.

@ 2981.00 - Hub.

@ 3352.00 - "

Brown Miller.

327

57 327

(54)

20-142-31- Wacker.

@ 3439- Wagon Road. E+W.

@ 3717.30 - Hub.

@ 4022.30 - ..

@ 4242- (Approx) we intersect
E+W random line through center of
N. half Sec. 20.

@ 4651.30 - Hub.

@ 4886.30 - Hub.

@ 5626.20 - Hub.

@ 5698.20 - True W $\frac{1}{16}$ cor betw.
Secs. 17-20-142-31 sets 46.10 feet East.
(90° from transit line)

we then walk to 2400 stake on
E+W random through center
of Sec. 20. (where we quit work
last night) and continue chain-
ing East from that point.

@ 2664- State Road. SE & NW.

@ 2979.00 - Hub.

@ 3138.70 - ..

@ 3566.70 - ..

@ 3643- (Approx) we intersect
N+S random line through center of
E. half Sec. 20.

327 Growmiller.

(55)

327

327

58

20-11-2-31- walkin.

@ 4342 - State Road. NE + SW.

@ 4490.00 - Hub.

@ 4936.00 - Hub.

@ 5059.00 - True $\frac{1}{4}$ Cor. later.

Seas. 20-21-11-2-31 sets 17.73 feet north.
(90° from transit line.)

Quit for night.

After supper I work a little
while at the office with Curo.

Still at Hotel Chase.

Grover Miller.

327

59.

327

(56)

20-142-31- Wacker.

Wednesday April 14th 1915.

Fair & Warm.

Gronmiller. Transit & chain.

F. W. Pettigman. Axe & chain.

Leave hotel at 7 A.M. and
walk to E $\frac{1}{2}$ Cor. betw. Secs.

20-29-142-31. Starting at this
point we chain North through
about center of E. half Sec. 20.

@ 221.80 - Hub.

@ 965.30 - "

@ 1568-(Approx) we intersect
E+W random line through about
center of S. half Sec. 20.

@ 2064.00 - Hub.

@ 2259.30 - "

@ 2927- State Road E+W.

@ 2938.30 - Hub.

@ 3226-(Approx) we intersect
E+W random line through center Sec. 20.

@ 3268.40 - Hub.

@ 3633.80 - "

@ 4278.60 - "

@ 4562.00 - "

327

Gronmiller.

(57)

20-142-31- Wacker. 327, 60

@ 4964- (Approx)- W3 intersect
E&W random through about
center of N. half Sec. 20.

@ 5133.40 - Hub.

@ 5783.00 - "

@ 6303.60 - "

@ 6429.50 - "

@ 6627.00 - True E $\frac{1}{16}$ Cor. betw.

Secs. 17-20-142-31- sets West 226.20 feet.
(90° from transit line).

Quit for night.

Still at Hotel Chase.

After supper Curo + I worked
in the office on calculations.

Growmiller.

327

327 20-142-31-Walker.

Thursday April 15th 1915.

Rain.

Growmiller. Transit & chain.
 Fred Bettcker. Axe & chain.
 300 ft. steel tape ^{and} also transit.

Leave hotel at 7:15. F.W. Pettyman, who has axed for me the last few days, is employed at the saw-mill, so John Gortel sends Fred Bettcker to take his place.

Rain starts just as we arrive at Sec. 20, so we find shelter in an old log shack.

By 10:30 it has cleared up sufficiently & we start in.

To set the center of the NE $\frac{1}{4}$ Sec. 20, we proceed as follows:

Set hub at 4951.00 on N & S random line through center of E. half Sec. 20.
 Set up over this hub, backsight on random ^{and} turn 90° and chain west 168.98 feet ^{and} set hub on true N & S line through center of E. half Sec. 20.

Set hub at 4927.20 on N & S random line through center of E. half Sec. 20.
 Set up over this hub, backsight on

(59)

62

20-142-31-Walker 327

random ^{and} turn 90° ^{and} chain west
168.17 feet and set hub on true N+S
line through center of E. half Sec.
20.

Set hub at 3408.30 on E+W random
through center of N. half Sec. 20. Set
up over this hub, backsighted on
random ^{and} turned 90° and
chained South 17.59 feet ^{and} set hub
on true E+W line through center of
N. half Sec. 20.

Set hub at 3414.40 on E+W random
through center of N. half Sec. 20.
Set up over this hub, backsighted on
random, turned 90° and chained
South 17.62 feet, where we set hub
on true E+W line through center of
N. half sec. 20.

From points thus set I got the point
of intersection of the true lines and
set a hub there. Set a guard-stake
over the hub.

Quit for night.

N. D. Gorman arrived on the 3 o'clock

Georniller.

327

63

327

(60)

20-142-31- Walker

train this morning and roomed
with me in #40 at the Hotel Chase.

Left at 11:30 A.M. through the

worked in office after supper on
plot and calculations. Gorman

and Curs also work.

Left on train 11:30 A.M. through

center of the building. 20.

Left for night.

Train Gorman arrived on 3 o'clock

train this morning and roomed

with me at #40, Hotel Chase.

Left after supper after supper.

Worked in office after supper.

Worked in office after supper.

Worked in office after supper.

Worked in office after supper.

327

Gronmiller

65

327

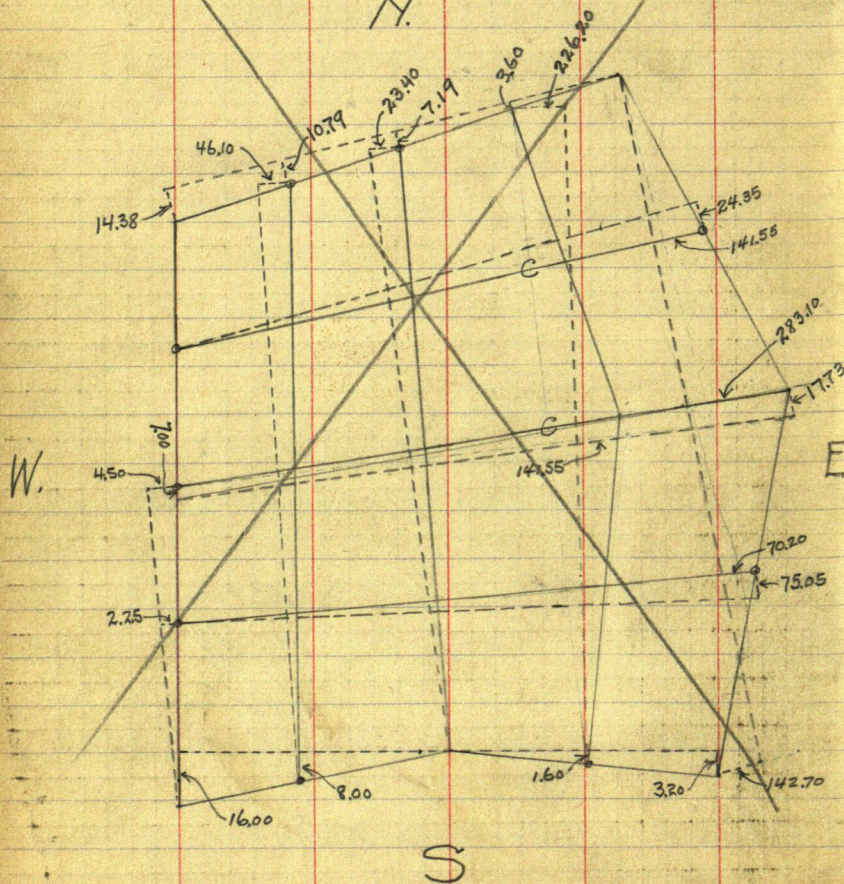
(62)

20-142-31- Walker

Plat of Sec. 20-142-31, Showing true lines solid and
Random lines dotted, and giving distances of
Right Angle ties of Random lines to true corners.

Not Drawn to Scale.

N.



(63)

327

66

20-142-31- Walker.

Referring to plat on opposite page,
the following are the corrections per
foot of points on random to points on
true lines:

$$\text{North Boundary} - \frac{14.38}{4444.60} = .00324 - S \text{ in each ft. W.}$$

$$E \& W \text{ thru N. half} - \frac{24.35}{4721.00} = .00516 - S \text{ " " " E.}$$

$$N. \text{ half } E. \text{ Boundary} - \frac{283.10}{3653.70} = .00775 - E \text{ " " " S.}$$

$$S. \text{ " } E. \text{ " " } - \frac{283.10}{3462.10} = .00818 - ?$$

$$E. \text{ " } S. \text{ " " } - \frac{3.20}{2566.00} = .00124 - S \text{ in each ft } E.$$

$$W. \text{ " } S. \text{ " " } - \frac{16.00}{2615.00} = .00612 - S \text{ " " " W.}$$

$$E \& W \text{ thru center} - \frac{10.73}{5059.00} = .00210 \text{ Add 7.00 to corrections all through. See Plat.}$$

$$N \& S \text{ " } W \text{ half} - \frac{46.10}{5698.20} = .00809 - E \text{ in each ft } N.$$

$$N \& S \text{ " } Center - \frac{23.40}{6157.40} = .00380 - E \text{ " " " N.}$$

$$E \& W \text{ " } S \text{ half} - \frac{75.05}{5096.50} = .01473 - N \text{ " " " E.}$$

$$N \& S \text{ " } E \text{ half} - \frac{226.20}{6627.00} = .03413 - ?$$

Note: These corrections were
figured by long division & check-
ed with logarithms.

Grown Miller

327

67 327

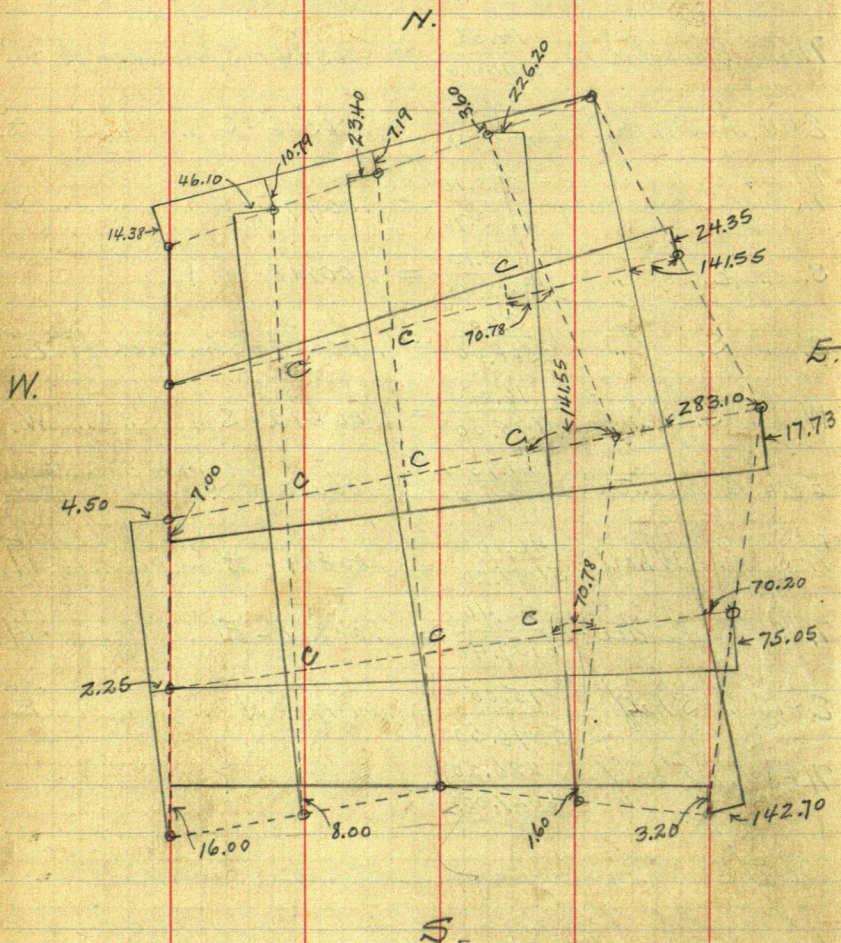
(64)

20-142-31-Wacker.

Plat of Sec. 20-142-31, Showing Random
lines drawn SOLID and true line DOTTED.

Rt. Angle distances of ties shown.

Not Drawn to Scale.



327

Groomer.

(65)

327

68

20-142-31-walker.

Referring to plat on opposite Page, the following are the corrections per foot of points on random to points on true lines.

$$N. Boundary - \frac{14.38}{4444.60} = .00324 - S \text{ in each ft. } W.$$

$$E+W \text{ thru } N\frac{1}{2} - \frac{24.35}{4721.00} = .00516 - S \text{ " " " } E.$$

$$N \text{ half } E \text{ Boundary} - \frac{283.10}{3653.70} = .07748 - E \text{ " " " } S.$$

$$S \text{ " } E \text{ " " } - \frac{283.10}{3462.10} = .00818$$

$$E \text{ " } S \text{ " " } - \frac{3.20}{2566.00} = .00124 - S \text{ in each ft. } E.$$

$$W \text{ " } S \text{ " " } - \frac{16.00}{2615.00} = .00612 - S \text{ " " " } W.$$

$$E+W \text{ thru center} - \frac{10.73}{5059.00} = .00210 \left\{ \begin{array}{l} (N \text{ in each ft. } E. \\ \text{Add } 7.00 \text{ to all} \\ \text{corrections. See} \\ \text{Plat.} \end{array} \right.$$

$$N+S \text{ " } W\frac{1}{2} - \frac{46.10}{5698.20} = .00809 - E \text{ in each ft. } N.$$

$$N+S \text{ " } \text{center} - \frac{23.40}{6157.40} = .00380 - E \text{ " " " } N.$$

$$E+W \text{ " } S\frac{1}{2} - \frac{75.05}{5096.50} = .01473 - N \text{ " " " } E.$$

$$N+S \text{ " } E\frac{1}{2} - \frac{226.20}{6627.00} = .03413$$

Groomer.

327

Cont. from p. 1.

April, 1915.

Survey of Sec. 20-142-31. Cont.

Geo. W. Miller.

Geo. W. Curo.

Fred Bettcher.

John Goebel.

	19	20	21	22	23	24
Geo. W. Miller.	1	1	1	1	1	1
Geo. W. Curo.						
Fred Bettcher.	1	1	1	0	0	0
John Goebel.	0	1/2	0	0	0	1

(67) 20-142-31. Walker.

327

70

327

73.

327

(70)

20-142-31- Wacker.

Friday April 16th, 1915.

Fair & warm.

Growmiller. Transit & chain.

Fred Bettken. Axe & chain.

300 ft. steel tape ^{2nd} also transit.

To establish the center of the E half of Sec. 20-142-31, we proceed as follows: Set up over hub # 3268.40 on random line N+S through center of E. half Sec. 20, backsight on random, turn 90° and chain 111.55 feet west and set hub.

Set hub at 3224.00 on N+S random through center of E. half sec. 20. Set up over this hub, backsight on random, turn 90° ^{2nd} chain west 110.04 feet ^{2nd} set hub.

Set hub at 3529.30 on E+W random through center of Sec. 20. Set up over this hub, BS on random, turn 90° and chain North 14.41 feet $[(3529.30 \times .00210) + 7.00]$ and set hub.

Set hub at 3532.30 on E+W random through center of Sec. 20. Set up over this hub, BS on random, turn 90° ^{2nd} chain North 14.42 ft. $[(3532.30 \times .00210) + 7.00]$ ^{2nd} set hub.

From points thus set, I obtained the

327

Growmiller.

(7)

327

74.

20-142-31. Walker.

intersection of the true lines and set a hub there. Set guard stake over hub.

To establish the center of the SE $\frac{1}{4}$ Sec. 20 we proceed as follows.

Set hub at 1603.80 on N+S random through E. half Sec. 20. Set up over this hub, ^{BS on Random} turn 90° and chain west 54.74 feet and set hub.

Set hub at 1613.80 on N+S random through E. half Sec. 20. Set up over this hub, BS on random, turn 90° and chain west 55.08 ft. and set hub.

Set hub at 3709.20 on E+W random through center of S half Sec. 20. Set up over this hub, backsight on random, turn 90° and chain North 54.64 ft. and set hub.

Set hub at 3689.90 on E+W random through center of S. half Sec. 20. Set up over this hub, BS on random, turn 90° and chain North 54.35 feet and set hub.

From points thus set, I obtained the intersection of the true lines and

Growmill. 327

20-142-31-Walker
set a hub there. Set guard-stake
over hub.

To establish the center of the S half
Sec. 20 we proceed as follows:

Set hub at 2474.80 on E+W random
through center of S. half of Sec. 20.
Set up over this hub, BS on random,
turn 90° and chain North 36.45 feet ^{2nd}
set hub.

Set hub at 2482.50 on E+W random
through $S\frac{1}{2}$ Sec. 20. Set up over this
hub, BS on random, turn 90° and chain
North 36.57 feet ^{2nd} set hub.

Set hub at 1505.20 on N+S random
through center Sec. 20. Set up over
this hub, BS on random, turn 90° and
chain East 5.72 feet ^{2nd} set hub.

Set hub at 1511.70 on N+S random
through center Sec. 20. Set up over this
hub, BS on random, turn 90° and chain
East 5.74 ft. ^{2nd} set hub. From points
thus set, I obtained the intersection
of the true lines and set a hub there.
Set guard-stake over hub.

327 quit for night. Still at Hotel Chase.
H. Brown Miller.

(73)

327 176

20-142-31 - Walker.

Saturday April 17th 1915.

Cloudy.

Growmiller. Transit & chain.

Fred Bettcher. Axe & chain.

300 ft. steel tape and Abbe transit.

To establish the center of Sec. 20,
Twp. 14th, Rge 31, we proceed as follows:

Set hub at 3010.10 on N+S random
through center of Sec. Set up over this
hub, BS on random, turn 90° and
chain East 11.44 ft. and set hub.

Set hub at 3005.00 on N+S random through
center of Sec. Set up over this hub, BS on
random, turn 90° and chain East 11.42 ft.
and set hub.

Set up over hub # 2335.50 on E+W random
through center of Sec., B.S. on random and
chain north 11.90 feet $[(2335.50 \times .00210) + 7.00]$ and
set hub.

Set hub at 2330.20 on E+W random
through center of Sec. Set up over this hub,
BS on random, turn 90° and chain north
11.89 feet $[(2330.20 \times .00210) + 7.00]$ and set hub.
From points thus set we obtained

Growmiller

327

20-142-31- Wacker.

the intersection of the true lines and set a hub there. Set a guard-stake over the hub.

To establish the center of the $N\frac{1}{2}$ Sec. 20, we proceed as follows:

Set hub at 4569.20 on NRS random through center of Sec. Set up over this hub, BS on random, turn 90° and chain East 17.36 feet and set hub.

Set hub at 4563.20 on N4S random through center of Sec. Set up over this hub, BS on random, turn 90° and chain East 17.34 feet and set hub.

Set hub at 2241.60 on E4W random through center of $N\frac{1}{2}$ Sec. 20. Set up over this hub, BS on random, turn 90° and chain South 11.57 ft. and set hub.

Set hub at 2239.00 on E4W random through center of $N\frac{1}{2}$ Sec. 20. Set up over this hub, BS on random, turn 90° and chain South 11.55 ft. and set hub.

From points thus set, I obtained the intersection of the true lines and set a hub there. Set guard-stake over hub.

20-142-31- Walker 327 78

To establish the center of the NW $\frac{1}{4}$ Sec. 20, we proceed as follows:

Set hub at 4232.60 on N x S random thru NW $\frac{1}{2}$ Sec. 20. Set up over this hub, BS on random, turn 90° and chain East 34.24 and set hub.

Set hub at 4241.80 on N x S random thru NW $\frac{1}{2}$ Sec. 20. Set up over this hub, BS on random, turn 90° and chain East 34.32 and set hub.

Set hub at 1133.00 on E x W random thru center of NW $\frac{1}{2}$ Sec. 20. Set up over this hub, BS on random, turn 90° and chain South 5.84 feet and set hub.

Set hub at 1136.40 on E x W Random thru center of NW $\frac{1}{2}$ Sec. 20. Set up over this hub, BS on random, turn 90° and chain South 5.86 and set hub.

From points thus set, I obtained the intersection of the true lines and set a hub there. Set guard-stake over hub.

Quit for night.

Still at Hotel Chase.

Growmiller - 327

20-142-31-Walker.

Sunday April 18th, 1915.

Fair & warm.

Groom Miller. Transit & chain.

Fred Bettcker. Axe & chain.

300 ft. steel tape ^{2nd} also transit.

To establish the center of the $W\frac{1}{2}$ Sec. 20, we proceed as follows:

Set hub at 2790.1 on N & S random through center of $W\frac{1}{2}$ Sec. 20. Set up over this hub, BS on random, turn 90° and chain East 22.57 feet ^{2nd} set hub.

Set hub at 2803.30 on N & S random through $W\frac{1}{2}$ Sec. 20. Set up over this hub, BS on random, turn 90° and chain East 22.68 feet and set hub.

Set hub at 1169.60 on E & W random thru center of Sec. 20. Set up over this hub, BS on random, turn 90° and chain North 9.46 feet, $[(1169.60 \times .00210) + 7.00]$ and set hub.

Set hub at 1173.20 on E & W random thru center of Sec. 20. Set up over this hub, BS on random, turn 90° and chain North 9.46 feet $[(1173.20 \times .00210) + 7.00]$ ^{2nd} set hub.

From points thus set, we obtain

327 Groom Miller.

(77)

327 80

20-142-31- Walker -

the intersection of the true lines and set hub there. Set guard-stake over the hub.

To establish the center of the SW $\frac{1}{4}$ Sec. 20, we proceed as follows:

Set hub at 1392.60 on N+S random thru center of W $\frac{1}{2}$ Sec. 20. Set up over this hub, BS on random, turn 90° and chain East 11.27 feet and set hub.

Set hub at 1401.10 on N+S random thru center of W $\frac{1}{2}$ Sec. 20. Set up over this hub, BS on random, Turn 90° and chain East 11.33 feet and set hub.

Set hub at 1232.30 on E+W random thru center of S $\frac{1}{2}$ Sec. 20. Set up over this hub, BS on random, Turn 90° and chain North 18.15 ft. and set hub.

Set hub at 1235.60 on E+W random thru center of S $\frac{1}{2}$ Sec. 20. Set up over this hub, BS on random, turn 90° and chain North 18.20 ft. and set hub.

From points thus set, we obtained the intersection of the true lines, and set a hub there. Set guard-stake over hub.

Quit for night.

Still at Hotel Chase.

Gronmill

327

20-142-walker.

Monday April 19th, 1915.

Fair & warm.

Gronmiller, Transit & chain.

Fred Bettcker. Axe & chain.

300 ft. steel tape and also transit.

Left hotel at 7 A.M. Walked to center of SE $\frac{1}{4}$ Sec. 20. Set up over hub set at intersection of true lines, (See P. 74), chained East on true line a distance of 89.09 feet and set hub. Set up over this hub and chained north 2.39 feet, at which point I set stake. The true center of the S.E. $\frac{1}{4}$ is at this point.

Walked to center of E. half Sec. 20. Set up over hub at intersection of true lines (See P. 70) and chained East on true line a distance of 178.18 feet and set stake. The true center of the E. half is at this point.

Walked to center of NE $\frac{1}{4}$ Sec.

(77)

327 82

20-142-31-walker.

20. Set up over hub at intersection of the true lines (See P. 58) and chained East on true line a distance of 89.09 feet and set stake. The true center of the NE $\frac{1}{4}$ is at this point.

Walked to center of S $\frac{1}{2}$ Sec. 20. Set up over hub at intersection of the true lines (See P. 72) and chained North a distance of 4.77 feet and set stake. The true center of the S $\frac{1}{2}$ is at this point.

Walked to center of SW $\frac{1}{4}$ Sec. 20. Set up over hub at intersection of true lines (See P. 71) and chained North a distance of 2.39 feet and set stake. The true center of the SW $\frac{1}{4}$ is at this point.

Quit for night.
Still at Hotel Chase.

Gronmiller.

327

327

(78)

20-142-31-Walker.

Tuesday April 20th 1915.

Kronmiller.

Fred Bettcher.

John Goebel ^{2nd} Team.

Fred Bettcher and I walk to Sec. 20. John Goebel drives to Sec. 20, carrying 24 $2\frac{1}{4}$ " x 4' galvanized iron pipes, which he distributes at the corners.

Fred Bettcher and I then set the corners as follows: At each established corner we set a $2\frac{1}{4}$ " x 4' galvanized iron pipe, capped on top, and with $\frac{3}{8}$ " x 1" iron anchor rod at bottom, nearly their full length in the ground in a 2 foot mound.

Along with us, and witnessing each corner as set, were Mr. John Goebel, Mr. Frank Breece, and Mr. Mitchell Ellis; all residents of Walker, Minn. We set 16 corners and quit for night.

327

Kronmiller.

Still at Hotel Chase.

(79)

327 '84

20-142-31- Walker.

Wednesday April 21st, 1915.

Gronmiller.

Fried Bettcher.

We walk to Sec. 20 and cont.
setting corners; each one we
set in the same manner as
described yesterday.

We finish at about 2:30 P.M.

Along with us, and witnessing
each corner as driven, were
Mr. Frank Breece, Mr. John Goebel,
and Mr. Mitchell Ellis; all resi-
dents of Walker, Minn.

At each of the following points we
pulled up the temporary corners
previously set in this survey, and
set in their places a $2\frac{1}{4}$ " x 4' gal-
vanized iron pipe, capped on
top, and with a $\frac{3}{8}$ " x 1" iron
anchor rod at bottom, nearly
their full length in the ground
in a two foot mound.

Gronmiller.

327

20-142-31- Walker -

- 1st. SW cor. Sec. 20, being the cor. to Secs. 19-20-29-30-142-31.
- 2nd. $W\frac{1}{6}$ cor. between Secs. 20-29.
- 3rd. $\frac{1}{4}$ cor. between Secs. 20-29.
- 4th. $E\frac{1}{6}$ cor. between Secs. 20-29.
- 5th. SE cor. Sec. 20, being the cor. to Secs. 20-21-28-29-142-31.
- 6th. $S\frac{1}{6}$ cor. between Secs. 20-21.
- 7th. $\frac{1}{16}$ " in center $SE\frac{1}{4}$ Sec. 20.
- 8th. $\frac{1}{16}$ cor. in center of $S\frac{1}{2}$ Sec. 20.
- 9th. $\frac{1}{16}$ " " " " $SW\frac{1}{4}$ " "
- 10th. $S\frac{1}{6}$ " between Secs. 19-20.
- 11th. $\frac{1}{4}$ " " " " 19-20.
- 12th. $\frac{1}{16}$ " in center $W\frac{1}{2}$ Sec. 20.
- 13th. Center of Sec. 20.
- 14th. $\frac{1}{16}$ cor. in center of $E\frac{1}{2}$ Sec. 20.
- 15th. $\frac{1}{4}$ cor. between Secs. 20-21.
- 16th. $N\frac{1}{6}$ " " " " 20-21
- 17th. $\frac{1}{16}$ " in center $NE\frac{1}{4}$ Sec. 20.
- 18th. $\frac{1}{16}$ " " " " $N\frac{1}{2}$ " 20.
- 19th. $\frac{1}{16}$ " " " " $NW\frac{1}{4}$ " 20.
- 20th. $N\frac{1}{6}$ " between Secs. 19-20.
- 21st. NW cor. Sec. 20, being the cor. to secs. 17-18-19-20-142-31.

(81)

20-142-31- Walker

827

86

22nd. W $\frac{1}{16}$ cor. between Secs. 17-20.23rd. $\frac{1}{4}$ " " " 17-20.24th. E $\frac{1}{16}$ " " " 17-20.

25th. we find already established a $2\frac{1}{4}" \times 4'$ galvanized iron pipe, capped at top, and set nearly its full length in the ground in a 2 foot mound, as recorded in Survey Record # 249, Page 56 of Book B County Record Book of Surveys.

827

Geo W Miller -

20-142-31- Walker.
Thursday April 22nd 1915.

I spend entire day and part
of night at the office working
on plat of Sec. 20, in which
work I was assisted by John W.
Curo, Paul Boese and N.D. Gorman.

Still at Hotel Chase.

(93)

327

88

20-142-31 Walker.

Friday April 23rd 1915.

I spend entire day and part of night at the office on plat of Sec. 20, in which work I was assisted by John W. Cuno, Paul Boese and N. D. Gorman.

Still at Hotel Chase.

Grovermill.

327

89 327

(84)

20-142-31-Walker.

Saturday April 24th, 1915.

I work all day on plat
and report of survey of
Sec. 20, in which work I
was assisted by Curo &
Boese.

John Goebel goes out to Sec. 20
and heaps more earth on
mounds at corners.

Still at Hotel Chase.

327

Growmiller.

1915. Recd from J.W. Curo.
Mar.

27 2-

Apr.

3 2-

14 5-

23 2-

24 5-

May 10 25-

" 26 10 86

" 26 20-

" 28 15-