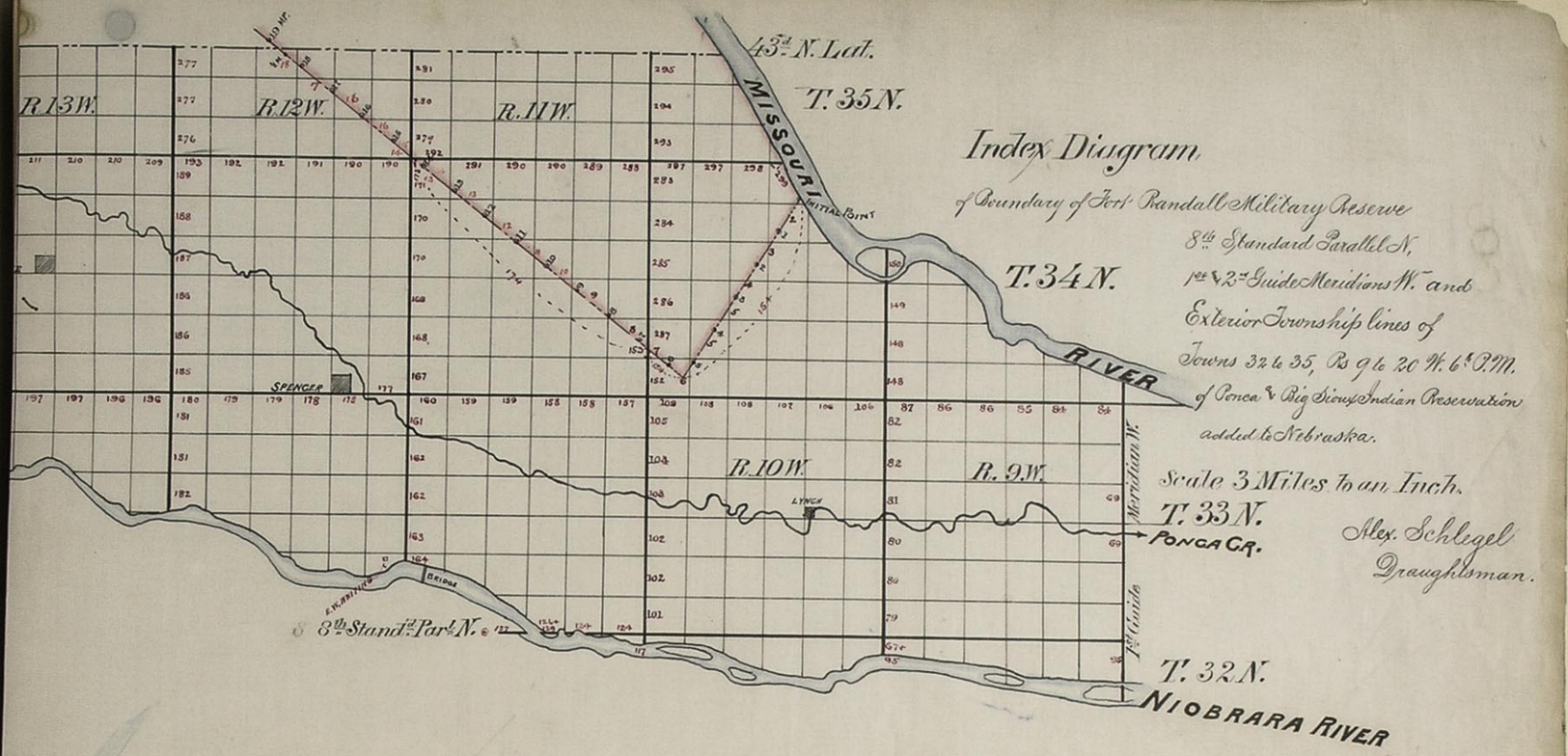
General Land Office • Original Field Notes

Book Number

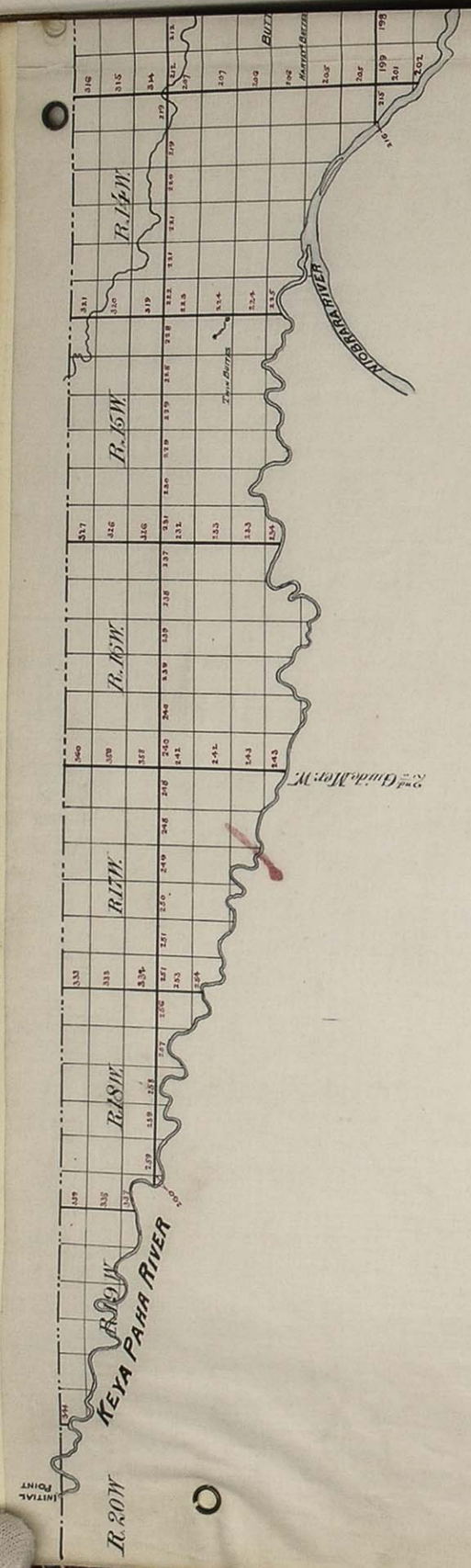
754

The images in this file are photographs of the notes of the original surveys of the State of Nebraska on file in the Office of the Nebraska State Surveyor located in Lincoln, Nebraska.

The original surveys in Nebraska began in the mid 1850's and were completed in the mid 1880's. The Nebraska office of the Surveyor General was closed June 30, 1886.


Index Diagram
of Boundary of Fort Randall Military Reserve
8th Standard Parallel N.
1st & 2nd Guide Meridians W. and
Exterior Township lines of
Towns 32 to 35, Rs 9 to 20 W. 6th P.M.
of Ponca & Big Sioux Indian Reservation
added to Nebraska.
Scale 3 Miles to an Inch.
Alex. Schlegel
Draughtsman.
43rd N. Lat.
T. 35N.
T. 34N.
T. 33N.
T. 32N.
R. 13W.
R. 12W.
R. 11W.
R. 10W.
R. 9W.
MISSOURI
RIVER
INITIAL POINT
SPENCER
LYNCH
PONCA CR.
NIOBRARA RIVER
8th Stand. Par. N.
1st Guide Meridian W.

No 5445



Rec'd with letter of R.B. Hughes, U.S. Surveyor General, Huron S.D. Feb 8/1897

a

(4—679.)

Book K

1st & 2nd G.M.W.
8th S.P.N.
B'dry Fort Randall Reserve
and
Ext. Tp. Lines
of
Tps. 32 to 35 N.
Rs. 9 to 20 W.
Neb.

FIELD NOTE

OF THE SURVEY OF

the

Boundary

of the

abandoned

Fort Randall

Military Reservation

~~Of the~~ in the States of ~~Meridian,~~

South Dakota and Nebraska

AS SURVEYED BY

Charles H. Bates, United States Deputy Surveyor,

Under his Contract No. 106, dated March 28, 1895.

Survey commenced August 3, 1895.

Survey completed August 31, 1895.

(1319—2,500.)

Names and Duties of Assistants.

Tim Burns, Chainman

E. A. Hinsdale, Chainman

C. H. Armstrong, Chainman and Moundman

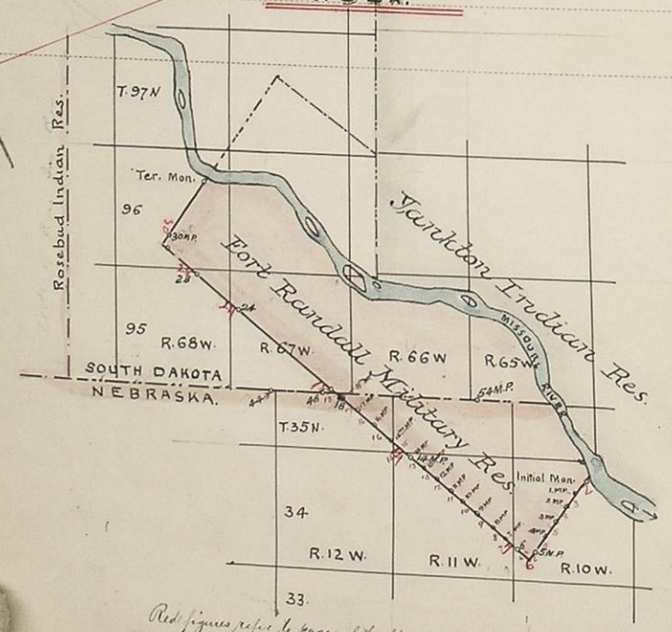
H. M. Finotti, Chainman and Moundman

E. R. Cook, Moundman

A. M. Fox, Moundman

C. Wright, Flagman and Moundman

INDEX.



Red figures refer to pages of the field notes

INDEX DIAGRAM.

Township ..... , *Range* .....

6	5	4	3	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

Meanders Page .....

Preliminary Oaths of Assistants.

We, Tim Burns, E. W. ~~and~~ Hinsdale, C. H. Armstrong and H. M. Finotte do solemnly swear that we will well and faithfully execute the duties of chainmen; that we will level the chain upon even and uneven ground, and plumb the tally pins either by sticking or dropping the same; that we will report the true distance to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance with instructions given us in the survey of Bdy line of the Abandoned Fort Randall Military Res. in South Dakota and Nebraska.

Tim Burns, E. W. Hinsdale, Chainman.

C. H. Armstrong, H. M. Finotte and Moundman, Chainman.

Subscribed and sworn to before me this 29" day of May, 1895.

SEAL

B. C. Woolley
Notary Public

We, E. R. Cook, A. M. Fox and C. Wright do solemnly swear that we will well and truly perform the duties of moundmen in the establishment of corners, according to the instructions given us, to the best of our skill and ability, in the survey of the Bdy line of the Abandoned Fort Randall Military Res. in South Dakota and Nebraska.

E. R. Cook, A. M. Fox, Moundman.

C. Wright, Moundman & Flagman

Subscribed and sworn to before me this 29" day of May, 1895.

SEAL

B. C. Woolley
Notary Public

We, ... and ..... do solemnly swear that we will well and truly perform the duties of axmen in the establishment of corners and other duties, according to instructions given us, to the best of our skill and ability, in the survey of .....

....., Axman.

....., Axman.

Subscribed and sworn to before me this ..... day of ....., 189 .

SEAL

I, C. Wright, do solemnly swear that I will well and truly perform the duties of flagman according to instructions given me, to the best of my skill and ability in the survey of the Bdy line of the Abandoned Fort Randall Military Res. in South Dakota and Nebraska.

C. Wright, Flagman.

Subscribed and sworn to before me this 29" day of May, 1895.

SEAL

B. C. Woolley
Notary Public

Boundary Line of the

Abandoned Fort Randall Military Reservation.

Survey commenced August 3,1895, and executed with a Heller and Brightly light mountain transit No. 6541, with a Smith's solar attachment. The horizontal limb being provided with two opposite verniers reading to single minutes of arc.

The instrument was examined, tested on the meridian at Huron, S.D., found correct and was approved by the surveyor general for South Dakota, May 11,1895.

In order to test the solar apparatus by comparing the results of a.m. and p.m. observations on the sun with a true meridian, I proceed as follows:

August 2, near the corner of secs. 7,12,13 and 18 on the west boundary of township 34 north, range 10 west,
latitude 42°56', longitude 98°32' W.
I set off 42°56' on the latitude arc and 17°40.5'N. on the decl.arc, and at 5 h.15 m. p.m., l.m.t. determine with the solar a true meridian, and mark a point thereof on a stake firmly driven in the ground, 5.00 chs. north of my station.

At 10h.39m. p.m. I observe Polaris at eastern elongation, in accordance with manual of instructions, and mark a point in the line thus determined on a stake driven in the ground 5.00 chs. north of my station.

August 3, at 6 a.m., l.m.t. I lay off azimuth 1°42.5' to the west, and mark the true meridian on the stake set August 2, on which the true meridian falls 0.2ins east of the mark determined by the solar.

At 6h.20m. a.m., l.m.t. I set off 42°56' on the latitude arc and 17°32.5'N.on the decl.arc and mark a point in the true meridian determined with the solar, on the stake already set 5.00 chs. north of my station; this mark falls 0.3 ins. east of the true meridian established by the Polaris observation.

The solar apparatus by p.m. and a.m. observations defines positions for the true meridian respectively about 0'10" west and 0'16" east of the meridian established by the Polaris observations, therefore I conclude that the adjustments of my solar are satisfactory.

I commence at the Initial Monument on the S.E. boundary, which is a cast-iron post 4 ft.above ground and 6 ins.square,marked U.S.M.R. on N.W.face.

This post is situated near the right bank of the Missouri river 30 ft. above the water on the S.E.slope of a gravelly knoll.
From this post

I run

S.33°04'W.

on a random line along the S.E.boundary of the reservation, and at 5 miles 35.33 chs. intersect 1.02 chs. N.57°04'W. of the iron monument at the south corner of the reservation. The true course of the boundary is therefore S.32°56'W.

I return to the Initial Monument and in accordance with special instructions, dig pits 36x36x12 ins. N.W. and S.E.of post; and raise a mound of earth 5 ft. base, 2½ ft.high,around post,

Thence I run

N.32°56'E.

along S.E.boundary,
Descending 15 ft.

1.20 Right bank of the Missouri river 15 ft.high:
Set a granite boulder 17x14x6 ins., 12 ins.in the ground for meander corner on boundary line,marked:
M.C.,on N.E.
M.R.,on S.W. and
P.L. on S.E. faces;
dig a pit 36x36x12 ins. 8 ft. S.W. of stone and raise a mound of earth 4 ft.base, 2 ft.high,S.W. of corner.
Land,hilly,
Soil,sandy, 3rd rate.

From the Initial Monument,

I run

S.32°56'W.

on 1st.mile.

Over hilly land.

12.07 Wagon road bears east and west.
15.57 The closing corner of secs. 3 and 10, which is a stone 10x6x4 ins. above ground firmly set and properly marked and witnessed as described by the surveyor general.
Difference between measurements of 40.00 chs. by two sets of chainmen is 2 links,position of middle point
by 1st.set 39.99 chs.
by 2nd set 40.01 chs. the mean of which is

40.00 Deposit a marked stone 12 ins.in the ground for the ½ mile corner; dig pits 36x36x12 ins. N.W. and S.E.of corner 5 ft.dist. and raise a mound of earth 5 ft. base, 2½ ft.high, over deposit. In S.E.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground, marked:
½ M.,on N.E.face
Thence over mountainous land.
67.45 Top of Tower Butte. This is a round clay bare butte rising about 50 ft.higher than the ridge on which it is located. It is very prominent land mark 300 ft. above the Missouri river; thence descend to corner. Difference bet. measurements of 80.00 chs. by two sets of chainmen is 8 links; position of middle point
by 1st set 79.96 chs.
by 2nd set,80.04 chs.; the mean of which is
80.00 Deposit a marked stone 12 ins.in the ground for the 1st mile corner; dig pits 36x36x12 ins. N.W. and S.E.of corner 5 ft.dist. and raise a mound of earth 5 ft. base, 2½ ft.high, over deposit. In S.E.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground, marked:
1 M.,on N.E.,
Ft.R.M.R.,on N.W. and
T.34 N.R.10 W.S.10,on S.E.faces
Land, hilly and mountainous,
Soil, 3rd and 4th rate.
Mountainous land 40.00 chs.

S.32°56'W.

on the 2nd mile.

Over mountainous land.
0.13 Wagon road bears N.W. and S.E.
24.60 Wagon road bears N.W. and S.E.
27.30 Drain 100 links wide, course N.W.; thence ascend.
29.80 The closing corner of fracl.secs. 10 and 15, which is a stake in mound of earth, firmly set and marked and witnessed as described by the surveyor general,
34.00 Brush drain 50 links wide, course N.E.
Difference bet. measurements of 40.00 chs. by two sets of chainmen is 6 links; position of middle point
by 1st set 39.97 chs.
by 2nd set,40.03 chs.; the mean of which is
40.00 Deposit a marked stone 12 ins.in the ground for ½ mile corner; dig pits 36x36x12 ins. N.W. and S.E.of cor. 5 ft.dist. and raise a mound of earth 5 ft.base, 2½ ft.high, over deposit. In S.E.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground,marked:
½ M.,on N.E.face.
47.08 The closing corner of fracl.secs. 15 and 16, which is a stone 10x4x4 ins. above ground, marked and witnessed as described by the surveyor general.
50.00 Top of ridge bears N.W. and S.E.; thence descend.
74.40 Foot, and drain 30 links wide, course west; thence ascend over ridges.

Difference bet. measurements of 80.00 chs. by two sets of chainmen is 16 links; position of middle point,
by 1st set 79.92 chs.
by 2nd set, 80.08 chs.; the mean of which is

80.00 Deposit a marked stone 12 ins.in the ground for the 2nd mile corner; dig pits 36x36x12 ins. N.W. and S.E.of corner 5 ft.dist. and raise a mound of earth 5 ft. base, 2½ ft.high, over deposit. In S.E.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground, marked:
2 M.,on N.E.,
Ft.R.M.R.,on N.W. and
T.34 N.R.10 W.S.16,on S.E.faces.

Land,mountainous,
Soil,3rd and 4th.rate.
Mountainous land 80.00 chs.

S.32°56'W.
on the 3rd mile.
Ascending.

18.00 Top of bluffs bears east and west; thence over rolling land.
22.60 Enter field bears east and west.
37.76 Leave field bears north and south.
38.54 A red cedar post on line, 6 ins.square,5 ft.above ground marked; U.S.R.

Difference bet. measurements of 40.00 chs.by two sets of chainmen is 2 lks.; position of middle point,
by 1st set, 39.99 chs.
by 2nd set, 40.01 chs.; the mean of which is

40.00 Deposit a marked stone 12 ins.in the ground for ½ mile cor; dig pits 36x36x12 ins.N.W. and S.E.of cor. 5 ft. dist. and raise a mound of earth 5 ft.base, 2½ ft. high, over deposit. In S.E.pit drive a stake 2 ft. long,2 ins.square,12 ins.in the ground,marked:
½ M., on N.E.face.

40.50 Barn on line.
41.00 House 1.00 chain S.E.of line.
44.02 Wire fence bears east and west.
44.30 Wagon road bears east and west.
44.56 Old clos.cor. of fracl.secs. 16 and 21 on line, which is a stone 8x8x4 ins.above ground,marked and witnessed as described by the surveyor general.
44.70 Enter field bears east and west.
70.20 Wagon road bears east and west.

Difference bet. measurements of 80.00 chs. by two sets of chainmen, is 6 links; position of middle point
by 1st set 79.97 chs.
by 2nd set 80.03 chs.; the mean of which is

80.00 In field: Deposit a marked stone 12 ins.in the ground for the 3rd mile cor.; dig pits 36x36x12 ins. N.W. and S.E.of cor. 5 ft.dist. and raise a mound of earth 5 ft.base, 2½ ft.high,over deposit.In S.E.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground, marked:

3 M.,on N.E.,
Ft.R.M.R.,on N.W.,
T.34 N.R.10 W.S.21,on S.E.faces.

Land, rolling; soil,sandy loam,2nd rate.
Aug.3, at this cor. I set off 17°27'N. on the decl.arc and at 0 h. 06m. p.m., l.m.t. observe the sun on the meridian; the resulting lat.is 42°54.5',the correct latitude.

S.32°56'W.
on the 4th mile.
Over rolling land.

21.00 Leave field bears north and south.
35.69 The old clos.cor.of fracl.secs. 20 and 21, which is a stone 6x6x4 ins. above ground,marked and witnessed as described by the surveyor general.
36.48 Enter field bears north and south.

Difference bet. measurements of 40.00 chs. by two sets of chainmen is 4 links; position of middle point,
by 1st set, 39.98 chs.
by 2nd set,40.02 chs.; the mean of which is

40.00 Deposit a marked stone 12 ins.in the ground for ½ mile corner; dig pits 36x36x12 ins. N.W. and S.E.of cor. 5 ft.dist. and raise a mound of earth 5 ft.base, 2½ ft.high, over deposit. In S.E.pit drive a stake 2 ft. long,2 ins.square,12 ins.in the ground,marked:
½ M.,on N.E.face.

51.62 Drain 35 links wide, course S.E.
59.65 Leave field bears east and west.
60.14 Old clos.cor. of fracl.secs.20 and 29,which is a stone 6x6x4 ins. above ground,marked and witnessed as described by the surveyor general.

Difference bet.measurements of 80.00chs. by two sets of chainmen is 2 lks.;position of middle point
by 1st set 79.99 chs.
by 2nd set 80.01 chs.; the mean of which is

80.00 Deposit a marked stone 12 ins.in the ground for the 4th mile cor; dig pits 36x36x12 ins.N.W. and S.E.of cor. 5 ft.dist. and raise a mound of earth 5 ft.base,2½ ft high, over deposit. In S.E.pit drive a stake 2 ft. long,2 ins.square,12 ins.in the ground,marked:
4 M.,on N.E.
Ft.R.M.R.,on N.W.,
T.34 N.R.10 W.S.29,on S.E.faces.

Land,rolling; soil,sandy loam,2nd rate.

S.32°56'W.on the 5th mile.

28.80 Wire fence near N.W.cor. bears E.and along line.

Difference bet. measurements of 40.00 chs.by two sets of chainmen is 2 lks.;position of middle point,
by 1st set 39.99 chs.
by 2nd set 40.01 chs.; the mean of which is

40.00 Deposit a marked stone 12 ins.in the ground for ½ mile cor.; dig pits 36x36x12 ins. N.W. and S.E.of cor. 5 ft.dist. and raise a mound of earth 5 ft.base,2½ ft. high,over deposit.In S.E.pit drive a stake 2 ft.long, 2 ins.square,12 ins.in the ground,marked:

½M.,on N.E.face.

51.35 Silver creek,dry, 25 lks.wide,course S.E.;through brush and scattering trees.

59.75 Same creek,dry,30 lks.wide,course S.W.;brush and scattering trees.

65.92 Wire fence bears east and west.

68.60 Same creek,dry,30 lks.wide,course E.and foot of bluff 60 ft.high; brush and scattering trees along creek and side of bluff.

73.00 Top of bluff bears S.and W.;leave brush and over rolling land.

74.95 Old clos.cor.of fracl.secs.29 and 32 which is a post 5 ins.sq.2 ft.above ground,marked and witnessed as described by the surveyor general.

Diff. bet.measurements of 80 chs.by two sets of chainmen is 4 lks.;position of middle point,

by 1st set 79.98 chs.

by 2nd set,80.02 chs.; the mean of which is

80.00 Deposit a marked stone 12 ins.in the ground for the 5th mile cor.;dig pits 36x36x12 ins. N.W.and S.E.of cor.5 ft.dist. and raise a mound of earth 5 ft.base,2½ ft. high,over deposit. In S.E.pit drive a stake 2 ft.long 2 ins.sq.,12 ins.in the ground,marked:

5 M.,on N.E.

Ft.R.M.R.,on N.W.

T.34 N.R.10 W.S.32,on S.E.faces.

Land.rolling,hilly at creek;soil,sandy loam,2nd rate.

S.32°56'W.on the 6th mile.

Over rolling prairie.

21.70 The old clos.cor. of fracl.secs. 31 and 32,which is a stone 8x6x4 ins.above ground,marked and witnessed as described by the surveyor general.

Wagon road bears S.E. and N.

35.33 The iron post at the S.cor. of the reservation. This is an iron post 6 ins.sq. 4½ ft.above ground,marked:U.S. M.R.,on N.E.face. In accordance with special instructions, I dig pits 36x36x12 ins. N.E.and N.W.of post 4 ft.dist. and raise a mound of earth 5 ft.base, 2½ ft.high, around same. From this post, I run N.51°35'W.

on a random line along the south west bdy.of the reservation, and at 8 miles 60.80 chs.intersect 24 lks.N.28°25'E.of the clos.cor.of secs. 6 and 31, on the N.bdy. of T.34 N.R.11 W.;therefore the true course of the S.W.bdy.from the iron post at S.cor. to the clos. cor.of secs. 6 and 31 on N.bdy.of T.34 N.R. 11 W., is N.51°36'W. I return to the iron post at the S.cor. of the reservation, which is already stated to be 35.33 chs. dist.from the 5th mile cor. and retrace the S.W.bdy.of the reservation;

Thence I run

N.51°36'W. on the 6th mile.

Over rolling prairie.

Chainage counting from the 5th mile corner.

35.33 The iron post at south corner.

Difference between measurements of 40.00 chs. by 2 sets of chainmen is 2 links; position of middle point--

by 1st set 39.99 chs.

by 2nd set,40.01 chs; the mean of which is

40.00 Deposit 2 quarts of gravel 12 ins. in the ground for ½ mile corner; dig pits 36x36x12 ins. N.E. and S.W. of corner 5 ft.dist. and raise a mound of earth 5 ft. base, 2½ ft.high, over deposit. In S.W. pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground, marked: ½ M.,on S.E.face.

71.30 Drain 40 links wide,course north.

No difference in measurements by two sets of chainmen.

80.00 Deposit a marked stone 12 ins.in the ground for the 6th mile corner; dig pits 36x36x12 ins. N.E. and S.W. of corner 5 ft.dist. and raise a mound of earth 5 ft.base, 2½ ft.high, over deposit. In S.W. pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground,marked:

6 M.,on S.E.,

Ft. R.M.R.,on N.E.,

T.34 N.R.11 W.S.31,on S.W.faces

Land,rolling,

Soil,sandy loam,2nd rate.

N.51°36'W.

on the 7th mile.

Over rolling land.

9.61 Drain 35 links wide,course N.E.

11.15 The old closing corner of fracl.secs. 30 and 31, which is a stone 6x5x4 ins. above ground,marked and witnessed as described by the surveyor general.

15.58 Wagon road bears north and south.

34.18 Wagon road bears N.E. and S.W.

Difference bet. measurements of 40.00 chs. by two sets of chainmen is 2 links; position of middle point,

by 1st set, 39.99 chs.

by 2nd set, 40.01 chs.; the mean of which is

40.00 Deposit a marked stone 12 ins.in the ground for ½ mile corner; dig pits 36x36x12 ins. N.E. and S.W.of corner 5 ft. dist. and raise a mound of earth 5 ft. base, 2½ ft.high, over deposit. In S.W.pit drive a stake 2 ft.long, 2 ins.square, 12 ins.in the ground, marked: ½ M.,on S.E.face.

47.73 The old closing corner of fracl.secs. 25 and 30 on west boundary of township 34 north, range 10 west, which is a stone 12x10x6 ins. above ground, marked and

witnessed as described by the surveyor general.

51.08 Wagon road bears N.E. and S.W.
Difference between measurements of 80.00 chs. by two sets of chainmen is 2 links; position of middle point,
by 1st set, 79.99 chs.
by 2nd set, 80.01 chs.; the mean of which is

80.00 Deposit a marked stone 12 ins.in the ground for the 7th mile corner; dig pits 36x36x12 ins. N.E. and S.W. of corner 5 ft·dist. and raise a mound of earth 5 ft. base, 2½ ft.high, over deposit. In S.W.pit drive a stake 2 ft.long,2 ins·square, 12 ins.in the ground, marked:
7 M.,on S.E.
Ft. R.M.R.,on N.E. and
T.34 N.R.11 W.S.25,on S.W. faces.
Land,rolling,
Soil,sandy loam, 2nd rate.

August 4, at 7h.50m. a.m., l.m.t., I set off 42°53.5' on the latitude arc and 17°15' N. on the decl.arc, and determine a true meridian with the solar at the 7th mile corner,

Thence I run

N.51°36'W.
on the 8th mile.

Over rolling land.

25.75 Drain 35 links wide, course north.
No difference between measurements of 40.00 chs. by 2 sets of chainmen.

40.00 Deposit a marked stone 12 ins.in the ground for ½ mile corner; dig pits 36x36x12 ins. N.E. and S.W.of corner 5 ft·dist. and raise a mound of earth 5 ft.base, 2½ ft.high, over deposit. In S.W.pit drive a stake 2 ft.long,2 ins·square,12 ins.in the ground,marked: ½ M.,on S.E.face.

43.34 Wagon road bears N.E. and S.W.

60.07 The old closing corner of fracl.secs. 24 and 25, which is a stone 6x4x4 ins. above ground,marked and witnessed as described by the surveyor general.

64.50 Drain 60 links wide,course N.W.

66.45 Drain 60 links wide,course N.E.

69.87 The old closing corner of fracl.secs. 23 and 24, which is a stone 7x6x4 ins. above ground,marked and witnessed as described by the surveyor general,

70.20 Drain 60links wide, course S.E.

75.35 Same drain 60 links wide, course N.E.

78.05 Wagon road bears east and west.
No difference in measurements of 80.00 chs. by two sets of chainmen.

80.00 Deposit a marked stone 12 ins.in the ground for the 8th mile corner; dig pits 36x36x12 ins. N.E. and S.W. of corner 5 ft·dist. and raise a mound of earth 5 ft.base, 2½ ft.high,over deposit. In S.W.pit drive a stake 2 ft.long, 2 ins·square, 12 ins.in the ground,marked:
8 M.,on S.E.,
Ft.R.M.R.,on N.E.,
T.34 N.R.11 W.S.23,on S.W.faces
Land, rolling,
Soil,sandy loam,2nd rate.

N.51°36'W.
on the 9th mile.

Over rolling prairie.

1.15 Enter field bears north and south.

6.80 Leave field bears east and west.

39.68 Silver creek,dry,45 links wide,course east; and wagon road bears north.
Difference between measurements of 40.00 chs. by two sets of chainmen is 2 links; position of middle point,
by 1st set, 39.99 chs.
by 2nd set, 40.01 chs.; the mean of which is

40.00 Deposit a marked stone 12 ins.in the ground for ½ mile corner; dig pits 36x36x12 ins. N.E. and S.W.of corner 5 ft·dist. and raise a mound of earth 5 ft.base 2½ ft.high,over deposit. In S.W.pit drive a stake 2 ft.long,2 ins·square,12 ins.in the ground,marked: ½ M.,on S.E.face.

49.54 Wire fence bears north and south.

51.15 Silver creek, dry, 20 links wide,course south.

54·45 Same creek, dry, 25 links wide,course east.

63.35 Drain 35 links wide,course south.

71.63 Enter field near S.E.corner .
Difference bet· measurements of 80.00 by two sets of chainmen is 4 links; position of middle point,
by 1st set 79.98 chs.
by 2nd set 80.02 chs.; the mean of which is

80.00 In field:
Deposit a marked stone 12 ins.in the ground for the 9th mile corner; dig pits 36x36x12 ins. N.E. and S.W.of corner 5 ft·dist. and raise a mound of earth 5 ft.base, 2½ ft.high,over deposit. In S.W.pit drive a stake 2 ft.long, 2 ins·square, 12 ins.in the

ground,marked:
9 M.,on S.E.,
Ft.R.M.R.,on N.E. and
T.34 N.R.11 W.S.23,on S.W.faces
Land,rolling,
Soil,sandy loam, 2nd rate.

N.51°36'W.
on the 10th mile.

Over rolling prairie.

11.83 Leave field bears north and south.
11.98 Wagon road bears north and south.
12.20 Old closing corner of fracl.secs. 22 and 23, which is a stone 6x4x4 ins.above ground,marked and witnessed as described by the surveyor general.
12.65 Enter field bears north and south.
23.30 Leave field bears north and south.
29.71 The old closing corner of fracl.secs. 15 and 22, which is a stone 12x6x4 ins.above ground,marked and witnessed as described by the surveyor general.
35.15 Enter field bears 10.00chs. north and 4.00 chs.south. Difference bet. measurements of 40.00 chs.; by two sets of chainmen is 6 links; position of middle point is
by 1st set 39.97 chs.
by 2nd set, 40.03 chs.; the mean of which is
40.00 Deposit a marked stone 12 ins.in the ground for ½ Mile corner; dig pits 36x36x12 ins. N.E. and S.W.of corner 5 ft.dist. and raise a mound of earth 5 ft. base, 2½ ft.high,over deposit. In S.W.pit drive a stake 2 ft.long, 2 ins.square, 12 ins.in the ground,marked:
½ M.,on S.E.face.
51.78 Leave field bears north and south.
57.12 Drain 20 links wide,course south.
58.18 S.W.corner of house of C.Paulson on line.
58.73 Enter field bears north and south.
67.50 Leave field bears north and south.
68.00 Wagon road bears north and south.
75.62 Drain 15 links wide,course S.E.
76.45 Same drain 15 links wide,course N.E.
79.75 Same drain 20 links wide,course south.
Difference between measurements of 80.00 chs. by two sets of chainmen, is 6 links; position of middle point,
by 1st set 79.97 chs.
by 2nd set, 80.03 chs.; the mean of which is
80.00 Deposit a marked stone 12 ins.in the ground for the 10th mile corner; dig pits 36x36x12 ins. N.E. and S.W. of corner 5 ft.dist. and raise a mound of earth 5 ft.base, 2½ ft.high,over deposit. In S.W.pit

drive a stake 2 ft.long,2 ins.square,12 ins.in the ground,marked:
10 M.,on S.E.
Ft.R.M.R.,on N.E.,
T.34 N.R.11 W.S.15,on S.W.faces.
Land,rolling,
Soil,sandy loam,2nd rate.

N.51°36'W.
on the 11th mile.
Over rolling land.
4.00 Enter field bears north and south.
11.63 Leave field bears east and west.
13.85 Drain 40 links wide,course east.
25.65 Enter field bears north and west; at S.E.corner.
33.55 Leave field bears north and south.
33.96 Wagon road bears north and south.
34.38 The old closing corner of fracl.secs. 15 and 16, which is a stone 6x4x4 ins. above ground,marked and witnessed as described by the surveyor general.
Difference between measurements of 40.00 chs., by two sets of chainmen, is 2 links; position of middle point,
by 1st set 39.99 chs.
by 2nd set 40.01 chs.; the mean of which is
40.00 Deposit a marked stone 12 ins.in the ground for ½ mile corner; dig pits 36x36x12 ins. N.E. and S.W.of corner 5 ft.dist. and raise a mound of earth 5 ft.base, 2½ ft.high,over deposit. In S.W.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground,marked:
½ M.,on S.E.face.
House bears N.24°30'E.-- E.Whestler.
45.93 Wire fence bears east, and along line.
78.41 N.W.corner of wire fence.
The old closing corner of fracl.secs. 9 and 16, which is a stone 8x4x2 ins. above ground,marked and witnessed as described by the surveyor general.
78.85 Drain 90 links wide,course west.
Difference between measurements of 80.00 chs.by two sets of chainmen, is 2 links; position of middle point,
by 1st set 79.99 chs.
by 2nd set 80.01 chs.; the mean of which is
80.00 Deposit a marked stone 12 ins.in the ground for the 11th mile corner; dig pits 36x36x12 ins. N.E. and S.W.of corner 5 ft.dist. and raise a mound of earth 5 ft.base, 2½ ft.high,over deposit. In S.W.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground,marked:
11 M.,on S.E.,
Ft.R.M.R.,on N.E. and
T.34 N.R.11 W.S. 9,on S.W.faces,
Land,rolling,

Soil, sandy loam, 2nd rate.

August 4, at this corner I set off 17°11.5'N. on the decl. arc and at 0 h. 06m. p.m., l.m.t. observe the sun on the meridian; the resulting latitude is 42° 56', which is 0.1' greater than the proper latitude.

N.51°36'W.
on the 12th mile.

Over rolling land.
23.15 Drain 100 links wide, course S.W.
31.90 Wagon road bears N.E. and S.W.
Difference bet. measurements of 40.00 chs. by two sets of chainmen is 2 links; position of middle point,
by 1st set 39.99 chs.
by 2nd set, 40.01 chs; the mean of which is
40.00 Deposit a marked stone 12 ins. in the ground for ½ mile corner; dig pits 36x36x12 ins. N.E. and S.W. of corner 5 ft. dist. and raise a mound of earth 5 ft. base, 2½ ft. high, over deposit. In S.W. pit drive a stake 2 ft. long, 2 ins. square, 12 ins. in the ground, marked ½ M., on S.E. face.
46.90 Wagon road bears north and south.
48.00 Enter field bears north and south.
56.25 Leave field bears north and south.
56.43 The old closing corner of fracl. secs. 8 and 9, which is a stone 9x6x5 ins. above ground, marked and witnessed as described by the surveyor general,
56.74 Wagon road bears north and south.
64.35 Enter field bears east and west.
75.65 Drain 30 links wide, course west.
Difference bet. measurements of 80.00 chs., by two sets of chainmen is 4 links; position of middle point,
by 1st set 79.98 chs.
by 2nd set, 80.02 chs.; the mean of which is
80.00 Deposit a marked stone 12 ins. in the ground for the 12th mile corner; dig pits 36x36x12 ins. N.E. and S.W. of corner 5 ft. dist. and raise a mound of earth 5 ft. base, 2½ ft. high, over deposit. In S.W. pit drive a stake 2 ft. long, 2 ins. square, 12 ins. in the ground, marked:
12 M., on S.E.
Ft. R.M.R., on N.E. and
T.34 N.R.11 W.S.8, on S.W. faces.
Land, rolling,
Soil, sandy loam, 2nd rate.

N.51°36'W.
on the 13th mile.

Through field.
12.35 Leave field bears north and south.
15.00 House of M. Shinest bears N.E. 60 links dist.
30.48 Wire fence bears north and south.
No difference bet. measurements of 40.00 chs. by two sets of chainmen.
40.00 Deposit a marked stone 12 ins. in the ground for ½ mile corner; dig pits 36x36x12 ins. N.E. and S.W. of corner 5 ft. dist. and raise a mound of earth 5 ft. base, 2½ ft. high, over deposit. In S.W. pit drive a stake 2 ft. long, 2 ins. square, 12 ins. in the ground, marked: ½ M., on S.E. face.
43.40 Wire fence bears north and south.
47.30 The old closing corner of fracl. secs. 5 and 8, which is a stone 12x10x4 ins. above ground, marked and witnessed as described by the surveyor general,
47.71 Wagon road bears east and west.
55.57 Sod barn on line.
56.25 Enter field bears north and south.
78.50 Leave field bears north and south.
78.91 The old closing corner of fracl. secs. 5 and 6, which is a stone 7x6x3 ins. above ground, marked and witnessed as described by the surveyor general.
79.20 Wagon road bears north and south.
No difference bet. measurements of 80.00 chs., by 2 sets of chainmen.
80.00 Deposit a marked stone 12 ins. in the ground for the 13th mile corner; dig pits 36x36x12 ins. N.E. and S.W. of corner 5 ft. dist. and raise a mound of earth 5 ft. base, 2½ ft. high, over deposit. In S.W. pit drive a stake 2 ft. long, 2 ins. square, 12 ins. in the ground, marked:
13 M., on S.E.,
Ft. R.M.R., on N.E. and
T.34 N.R.11 W.S.6, on S.W. faces.
Land, rolling,
Soil, sandy loam, 2nd rate.

N.51°36'W.
on the 14th mile.

Over rolling prairie.

13.00 Drain 20 links wide, course south.
31.20 Enter field bears east and west.
Difference bet. measurements of 40.00 chs. by two sets of chainmen, is 4 links; position of middle point

by 1st set 39.98 chs.
by 2nd set, 40.02 chs.; the mean of which is
40.00 Deposit a marked stone 12 ins. in the ground for ½ mile corner; dig pits 36x36x12 ins. N.E. and S.W. of corner 5 ft. dist. and raise a mound of earth 5 ft. base, 2½ ft. high, over deposit. In S.W. pit drive a stake 2 ft. long, 2 ins. square, 12 ins. in the ground, marked:
½ M., on S.E. face.
51.66 Leave field bears north and south.
60.30 Wagon road bears east and west.
78.00 Enter field bears north and south.
Difference bet. measurements of 80.00 chs. by two sets of chainmen, is 6 links; position of middle point
by 1st set 79.97 chs.
by 2nd set 80.03 chs.; the mean of which is
80.00 Deposit a marked stone 12 ins. in the ground for the 14th mile corner; dig pits 36x36x12 ins. N.E. and S.W. of corner 5 ft. dist. and raise a mound of earth 5 ft. base, 2½ ft. high, over deposit. In S.W. pit drive a stake 2 ft. long, 2 ins. square, 12 ins. in the ground, marked:
14 M., on S.E.
Ft.R.M.R., on N.E. and
T.34 N.R.11 W.S.6, on S.W. faces.
Land, rolling,
Soil, sandy loam, 2nd rate.

N.51°36'W.

on the 15th mile.

Through field.
15.40 Leave field bears east and west.
16.13 The old closing corner of fracl. secs. 6 and 31, on north boundary of township 34 north, range 11 west, which is a stone 12x6x4 ins. above ground, marked and witnessed as described by the surveyor general.
August 4, 1895.

August 23, at 6h.45m. a.m., l.m.t. I set off 42°57.5' on the latitude arc and 11°28'N. on the decl. arc and determine a true meridian with the solar at the closing corner of fracl. secs. 6 and 31, on north boundary of township 34 north, range 11 west.

Thence I run

N.51°36'W.

on a random line along the S.W. boundary of the reservation and at 5 miles 6.00 chs. intersect 24 links N.38°22'E. of the stone mound situated near the head of Joe Davis creek, and in the Government

trail from Ft. Randall to Ft. Laramie, which mound in former surveys has been recognized as one of the reservation boundary mounds. The course of the S.W. boundary from the closing corner heretofore described to this stone mound, is therefore N.51°38'W.

I return to the closing corner of fracl. secs. 6 and 31 on the north boundary of T.34 N.R.11 W., which is already stated to be 16.13 chs. distant from the 14th mile corner and retrace the S.W. boundary of the reservation,

I run

N.51°38'W.

on the 15th mile

Over rolling prairie.

Chainage counting from the 14th mile corner.

16.13 The old closing corner.
23.68 Wagon road bears north and south.
33.63 Wagon road bears east and west.
Difference bet. measurements of 40.00 chs. by two sets of chainmen is 2 links; position of middle point,
by 1st set, 39.99 chs.
by 2nd set, 40.01 chs.; the mean of which is
40.00 Deposit a marked stone 12 ins. in the ground for ½ mile corner; dig pits 36x36x12 ins. N.E. and S.W. of corner 5 ft. dist. and raise a mound of earth 5 ft. base, 2½ ft. high, over deposit. In S.W. pit drive a stake 2 ft. long, 2 ins. square, 12 ins. in the ground, marked:
½ M., on S.W. face.
47.00 Spring bog drain 100 links wide, course south.
58.00 Enter field bears east and west.
70.10 Leave field bears east and west.
73.00 Enter drain, course to the south.
77.60 Leave drain from the north; thence ascend 100 ft. on sandy ridge.
No difference bet. measurements of 80.00 chs. between two sets of chainmen.
80.00 Deposit a marked stone 12 ins. in the ground for the 15th mile corner; dig pits 36x36x12 ins. N.E. and S.W. of corner 5 ft. dist. and raise a mound of earth 5 ft. base, 2½ ft. high, over deposit. In S.W. pit drive a stake 2 ft. long, 2 ins. square, 12 ins. in the ground, marked:
15 M., on S.E.
Ft. R.M.R., on N.E.
T.35 N.R.12 W.S.36, on S.W. faces.
Land, rolling,
Soil, sandy loam, 2nd rate.

N.51°38'W.
on the 16th mile.

Ascending sand ridge.
12.00 Top of ridge bears east and west.
Descend gradually on north side.
Difference bet. measurements of 40.00 chs. by two sets of chainmen is 4 links; position of middle point,
by 1st set 39.98 chs.
by 2nd set 40.02 chs., the mean of which is
40.00 Deposit a marked stone 12 ins.in the ground for ½ mile corner; dig pits 36x36x12 ins. N.E. and S.W.of corner 5 ft.dist. and raise a mound of earth 5 ft.base, 2½ ft.high, over deposit. In S.W.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground,marked:
½ M.,on S.E.face.
49.25 Wagon road bears north and south.
51.50 Enter field bears east and west.
62.45 Drain 40 links wide, bears north.
64.45 Leave field bears east and west.
Difference bet. measurements of 80.00 chs.by two sets of chainmen is 4 links; position of middle point,
by 1st set 79.98 chs.
by 2nd set 80.02 chs.; the mean of which is
80.00 Deposit a marked stone 12 ins.in the ground for the 16th mile corner; dig pits 36x36x12 ins. N.E. and S.W. of corner 5 ft.dist. and raise a mound of earth 5 ft.base, 2½ ft.high,over deposit. In S.W.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground, marked:
16 M.,on S.E.
Ft.R.M.R.,on N.E. and
T.35 N.R.12 W.S.26,on S.W.faces.
Land,hilly,
Soil,sandy,2nd and 3rd rate.

N.51°38'W.
on the 17th mile.

Over rolling land.

7.44 Wagon road, bears north and south.
17.00 Drain 100 links wide, course north.
24.90 Drain, 25 links wide, course N.W.
38.00 House of T.K.Irvine bears West 11 chs.dist.
No difference bet. measurements of 40.00 chs., by two sets of chainmen.
40.00 Deposit a marked stone 12 ins.in the ground for ½ mile corner; dig pits 36x36x12 ins. N.E. and S.W. of cor. 5 ft.dist. and raise a mound of earth 5 ft.base, 2½

ft.high, over deposit. In S.W.pit drive a stake 2 ft.long,2 ins. square,12 ins.in the ground,marked:
½ M.,on S.E.face.
42.20 Enter field bears north and south.
49.85 Leave field bears east and west.
59.00 House of Geo.Hull 2.00 chs. to the left of line and barn 1.00 chain to the right of line.
65.55 Wagon road bears north and south.
73.00 Enter field bears east and west.
No difference bet. measurements of 80.00 chs. by two sets of chainmen.
80.00 Deposit a marked stone 12 ins.in the ground for the 17th mile cor.; dig pits 36x36x12 ins. N.E. and S.W. of cor. 5 ft.dist. and raise a mound of earth 5 ft. base, 2½ ft.high, over deposit. In S.W.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground, marked:
17 M.,on S.E.
Ft.R.M.R.,on N.E.
T.35 N.R.12 W.S.27,on S.W.faces.
Land,rolling,
Soil,sandy loam,2nd rate.

N.51°38'W.
on the 18th mile.
Over rolling prairie, through field.
9.15 Leave field bears east and west.
33.00 House 1.00 chain to the left of line.
33.54 Drain 60 links wide,course north.
34.92 Wire fence bears north and south.
37.12 Wagon road bears east and west.
Difference bet. measurements of 40.00 chs. by two sets of chainmen is 4 lks;position of middle point
by 1st set 39.98 chs.
by 2nd set 40.02 chs.; the mean of which is
40.00 Deposit a marked stone 12 ins. in the ground for ½ mile corner; dig pits 36x36x12 ins. N.E. and S.W.of cor. 5 ft.dist. and raise a mound of earth 5 ft.base, 2½ ft.high, over deposit. In S.W.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground, marked:
½ M.,on S.E.face.
45.07 Enter field bears north and south.
70.25 Leave field bears north and south.
Difference bet. measurements of 80.00 chs. by two sets of chainmen is 6 links; position of middle point
by 1st set 79.97 chs.
by 2nd set, 80.03 chs.; the mean of which is
80.00 Deposit a marked stone 12 ins.in the ground for the 18th mile corner; dig pits 36x36x12 ins. N.E. and S.W.of corner 5 ft.dist. and raise a mound of earth 5 ft.base, 2½ ft.high, over deposit. In S.W.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground,marked:

18 M., on the S.E.
Ft.R.M.R., on the N.E. and
T.35 N.R.12 W.S.22, on S.W.faces
Land,rolling,
Soil, sandy loam, 2nd rate.

N.51°38'W.
on the 19th mile.

Over gently rolling land.
20.16 Wagon road bears north and south.
37.26 Wagon road bears north and south.
Difference bet. measurements of 40.00 chs. by two sets of chainmen is 2 lks.; position of middle point
by 1st set 39.99 chs.
by 2nd set, 40.01 chs.; the mean of which is
40.00 Deposit a marked stone 12 ins.in the ground for ½ mile cor.; dig pits 36x36x12 ins. N.E. and S.W.of cor. 5 ft.dist. and raise a mound of earth 5 ft.base, 2½ ft.high,over deposit. In S.W.pit drive a stake 2 ft. long,2 ins.square,12 ins.in the ground,marked:
½ M.,on S.E.face.

Intersection of Neb. So Dak. line

47.85 Intersect boundary line South Dakota and Nebraska at a point from which the 46½ mile stone bears west 12.01 chs.dist:

From this point to page 35 applies to Survey of Reservation in So. Dakota

Set an oak post 5 ft.long, 5x4 ins.square, with marked stone 24 ins.in the ground for closing corner,marked
C.C., N.,on S.
U.S.M.R., on E.,
S.D.,on N. and
46 M. 52.01 chs. on W.faces;
dig pits 30x30x12 ins. S.E., E. and W., crosswise on each line 4 ft.dist. and raise a mound of earth 5 ft.base, 2½ ft.high, around post.
Note: This post, with mound and pits, was located 2.68 chs. east. of the true crossing of the state and boundary lines. I obliterate this old corner and change the markings on the west face of the post to agree with the distance of the true point, and set the post as shown in the preceding notes.
Difference bet. measurements of 80.00 chs. by two sets of chainmen is 2 lks.; position of middle point,
by 1st set, 79.99 chs.
by 2nd set, 80.01 chs.; the mean of which is
80.00 Deposit a marked stone 12 ins.in the ground for the 19th mile corner; dig pits 36x36x12 ins. N.E. and S.W. of corner 5 ft.dist. and raise a mound of earth 5 ft. base, 2½ ft.high, over deposit. In S.W.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground, marked:

19 M.,on S.E.
Ft.R.M.R.,on N.E. and
T.95 N.R.67 W.S.35,on S.W.
Land,gently rolling,
Soil,sandy loam,2nd rate.

N.51°38'W.
on the 20th mile.

Over gently rolling land.
22.13 The mound of stone near the head of Joe Davis creek, heretofore described.

August 23,1895.

August 28, at 7h.a.m., l.m.t. I set off 43°00.5' on the latitude arc and 9°44'N.on the decl.arc and determine a true meridian with the solar at the stone mound before described,

Thence I run

N.51°38'W.
on a random line
and at 2 miles 3.62 chs. intersect 5.14 chs. N.38°22'E. of a red cedar post,marked
U.S.R.
firmly set in a mound of stone which corner I recognize, from description furnished me by the surveyor general, to be one of the original corners set on the S.W.boundary line by Lieut.Clark in 1860.
The course of the S.W.boundary, from the stone mound to the cedar post is therefore N.53°26'W.

I return to the stone mound which is already stated to be 22.13 chs.dist.from the 19th mile corner, and retrace the S.W.boundary of the reservation,

I run

N.53°26'W.
on the 20th.mile.

Over rolling prairie.

Chainage counting from the 19th mile corner.
22.13 The stone mound.
22.60 Wagon road bears S.75°E. and N.75°W. (Old Government trail.)

34.00 Top of hills bears N.E. and S.W.; descend 75 ft.
37.70 Foot, and Joe Davis creek, dry, 20 links wide, course N.E.; ascend.
No difference bet. measurements of 40.00 chs. by two sets of chainmen.
40.00 Deposit a marked stone 12 ins. in the ground for ½ mile corner; dig pits 36x36x12 ins. N.E. and S.W. of corner 5 ft. dist.; and raise a mound of earth 5 ft. base, 2½ ft. high, over deposit. In S.W. pit drive a stake 2 ft. long, 2 ins. square, 12 ins. in the ground, marked:
½ M., on S.E. face.
45.00 Top of hills bears N.E. and S.W.; thence over rolling land.
61.00 Enter field bears north and south.
63.00 House 6.00 chs. to the right of line.
74.80 Leave field bears north and south.
Difference bet. measurements of 80.00 chs. by two sets of chainmen, is 2 links; position of middle point,
by 1st set, 79.99 chs.
by 2nd set, 80.01 chs.; the mean of which is
80.00 Deposit a marked stone 12 ins. in the ground for the 20th mile corner; dig pits 36x36x12 ins. N.E. and S.W. of corner 5 ft. dist. and raise a mound of earth 5 ft. base, 2½ ft. high, over deposit. In S.W. pit drive a stake 2 ft. long, 2 ins. square, 12 ins. in the ground, marked:
20 M., on S.E.,
Ft.R.M.R., on N.E. and
T.95 N.R.67 W.S.27, on S.W. faces.
Land, rolling,
Soil, sandy loam, 2nd rate.

N.53°26'W.
on the 21st. mile.

Nearly level land.
11.10 Drain 25 links wide, course north, in ravine 40 ft. deep.
39.40 Wagon road bears N.E. and S.W.
Difference bet. measurements of 40.00 chs. by two sets of chainmen is 2 links; position of middle point
by 1st set 39.99 chs.
by 2nd set, 40.01 chs.; the mean of which is
40.00 Deposit a marked stone 12 ins. in the ground for ½ mile corner; dig pits 36x36x12 ins. N.E. and S.W. of cor. 5 ft. dist. and raise a mound of earth 5 ft. base, 2½ ft. high, over deposit. In S.W. pit drive a stake 2 ft. long, 2 ins. square, 12 ins. in the ground, marked:
½ M., on S.E. face.
53.42 Wagon road bears N.E. and S.W.
73.79 Wagon road bears north and south.

Difference bet. measurements of 80.00 chs., is 4 links; position of middle point,
by 1st set, 79.98 chs.
by 2nd set, 80.02 chs.; the mean of which is
80.00 Deposit a marked stone 12 ins. in the ground for the 21st. mile corner; dig pits 36x36x12 ins. N.E. and S.W. of corner 5 ft. dist. and raise a mound of earth 5 ft. base, 2½ ft. high, over deposit. In S.W. pit drive a stake 2 ft. long, 2 ins. square, 12 ins. in the ground, marked:
21 M., on S.E.
Ft.R.M.R., on N.E. and
T.95 N.R.67 W.S.28, on S.W. faces.
Land, nearly level,
Soil, sandy loam, 2nd rate.

N.53°26'W.
on the 22nd mile.

Over gently rolling land.

25.74 The cedar post, hereinbefore described.

August 28, at this post I set off 9°38' N. on the decl. arc and at 0 h. 1 m. p.m., l.m.t. observe the sun on the meridian; the resulting latitude is 43° 01.5', the correct latitude.

Having located the iron post at the S.W. corner of the reservation to be in section 32, township 96 north, range 68 west, while subdividing that township, and having the intersection of the boundary line with the south boundary line of the state, I calculate a course therefrom on which to run a random line from the cedar post in the 22nd mile to the iron post at the west corner of the reservation.
Therefore I run

N.54°10'W.
on a random line along the S.W. boundary of the reservation and at 8 miles 10.97 chs. intersect 1.30 chs. N.35°50'E. of the iron post. The course of the S.W. boundary from the cedar post to the iron post is therefore N.54°17'W.

I return to the cedar post which is already stated to be 25.74 chs. from the 21st mile corner and retrace the S.W. boundary of the reservation.

August 30, at this post, at 8 h. 15 m. a.m., l.m.t. I set off 43°01.5' on the latitude arc and 9°59'N.

on the decl·arc and determine a true meridian with the solar,

Thence I run

N.54°17'W.
on the 22nd mile.

Chainage counting from the 21st mile corner.

25.74 The cedar post.

38.06 Wagon road bears east and west.
Difference bet. measurements of 40.00 chs. is 2 links; position of middle point,
by 1st set, 39.99 chs.
by 2nd set, 40.01 chs.; the mean of which is

40.00 Deposit a marked stone 12 ins.in the ground for ½ mile corner; dig pits 36x36x12 ins. N.E. and S.W. of cor. 5 ft·dist. and raise a mound of earth 5 ft.base, 2½ ft.high, over deposit. In S.W.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground,marked:
½ M.,on the S.E.face.

40.25 Wagon road bears north and south.

56.69 Wagon road bears north and south.

56.90 Enter field bears north and south

66.65 Leave field bears north and south.

73.00 House of Geo. Heap 2.00 chs. to the left of line.

78.36 Enter field bears north and south.
Difference bet. measurements of 80.00 chs. by two sets of chainmen, is 4 links; position of middle point,
by 1st set 79.98 chs.
by 2nd set, 80.02 chs.; the mean of which is

80.00 Deposit a marked stone 12 ins.in the ground for the 22nd mile corner; dig pits 36x36x12 ins. N.E. and S.W. of corner 5 ft·dist. and raise a mound of earth 5 ft.base, 2½ ft.high, over deposit. In S.W.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground,marked:
22 M.,on S.E.,
Ft.R.M.R., on N.E. and
T.95 N.R.67 W.S.20,on S.W.faces.

Land,gently rolling,
Soil,sandy loam, 2nd rate.

N.54°17'W.
on the 23rd mile.

Through field.

5.00 Leave field bears north and south.

15.00 Wagon road bears east and west.

37.20 Enter field bears north and south.
Difference bet. measurements of 40.00 chs. by the two sets of chainmen, is 2 links; position of middle point,
by 1st set, 39.99 chs.
by 2nd set, 40.01 chs; the mean of which is

40.00 Deposit a marked stone 12 ins.in the ground for ½ mile corner; dig pits 36x36x12 ins. N.E. and S.W. of corner 5 ft.dist. and raise a mound of earth 5 ft. base, 2½ ft.high, over deposit. In S.W.pit drive a stake 2 ft.long,2 ins.square,12 ins. in the ground, marked:
½ M.,on S.E.face.

54.00 Leave field, bears east and west.

56.00 House of J.Kline bears N.35°45'E., 2.00 chs. dist.

68.85 Enter field near N.E.corner, bears south and west.

75.00 Leave field bears N.E. and S.W.
Difference bet. measurements of 80.00 chs. by the two sets of chainmen, is 3 links; position of middle point,
by 1st set, 79.98½ chs.
by 2nd set, 80.01½ chs.; the mean of which is

80.00 Deposit a marked stone 12 ins.in the ground for the 23rd mile corner; dig pits 36x36x12 ins. N.E. and S.W of corner 5 ft·dist. and raise a mound of earth 5 ft.base, 2½ ft.high, over deposit. In S.W.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground, marked:
23d M.,on S.E.,
Ft.R.M.R.,on N.E. and
T.95 N.R.67 W.S.20,on S.W.faces.

Land,gently rolling,
Soil,sandy loam, 2nd rate.

N·54°17'W.
on the 24th mile.

Over rolling prairie.

8.77 Wagon road bears east and west.

15.50 Top of hills bears N.E. and S.W; leave rolling prairie and descend mountainous land.

21.35 Wagon road bears N.E. and S.W.

34.65 Drain 20 links wide,course N.W.; ascend ridge.

38.00 Top of ridge bears N.W. and S.E.; thence over ridges.
Difference bet. measurements of 40.00 chs. by the two sets of chainmen is 4 links; position of middle point,
by 1st set 39.98 chs.
by 2nd set, 40.02 chs .; the mean of which is

40.00 Deposit a marked stone 12 ins.in the ground for ½ mile corner; dig pits 36x36x12 ins. N.E. and S.W. of cor.

5 ft.dist. and raise a mound of earth 5 ft.base, 2½ ft. high, over deposit. In S.W.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground,marked:
½ M.,on S.E.face.

72.00 Drain 100 links wide,course N.E.; ascend 200 ft.
Difference bet. measurements of 80.00 chs. by two sets of chainmen is 7 links; position of middle point,
by 1st set, 79.96½ chs.
by 2nd set, 80.03½ chs.; the mean of which is

80.00 Deposit a marked stone 12 ins.in the ground for the 24" mile corner; dig pits 36x36x12 ins. N.E. and S.W.of corner 5 ft.dist. and raise a mound of earth 5 ft. base, 2½ ft.high, over deposit. In S.W.pit drive a stake 2 ft.long, 2 ins.square,12 ins.in the ground, marked:
24 M.,on S.E.
Ft.R.M.R.,on N.E. and
T.95 N.R.67 W.S.18,on S.W.faces.
Land,rolling and very hilly,
Soil,2nd and 3rd rate.
Mountainous land 64.50 chs.

August 30, at this corner I set off 8°55.5'N. on the decl.arc and at 0 h. 1 m. p.m., l.m.t. observe the sun on the meridian; the resulting latitude is 43°03' which is about 0.1' greater than the proper latitude.

N.54°17'W.
on the 25th.mile.

Over mountainous land; ascending.
8.00 Top of ridge bears N.E. and S.W.; thence descend to drain.
19.50 Foot, and drain 25 links wide, course north; ascend.
Difference bet. measurements of 40.00 chs. by the two sets of chainmen, is 3 links; position of middle point,
by 1st set, 39.98½ chs.
by 2nd set, 40.01½ chs.; the mean of which is
40.00 Deposit a marked stone 12 ins.in the ground for ¼ mile corner; dig pits 36x36x12 ins. N.E. and S.W.of corner 5 ft.dist. and raise a mound of earth 5 ft.base, 2½ ft.high, over deposit. In S.W.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground,marked:
¼ M.,on S.E.face.
50.00 Top of ridge bears N.E. and S.W.; thence descend.
64.45 Foot, and drain 50 links wide,course N.E.; ascend.
78.00 Top of ridge bears north and south; thence across top.
Difference bet. measurements of 80.00 chs. by the two sets of chainmen, is 4 links; position of middle

point
by 1st set, 80.02 chs.
by 2nd set, 79.98 chs.; the mean of which is

80.00 Deposit a marked stone 12 ins.in the ground for the 25th mile corner; dig pits 36x36x12 ins. N.E. and S.W. of corner 5 ft.dist. and raise a mound of earth 5 ft.base, 2½ ft.high, over deposit. In S.W. pit drive a stake 2 ft.long,2 ins.square,12 ins. in the ground,marked:
25 M.,on S.E.,
Ft.R.M.R., on N.E. and
T.95 N.R.68 W.S.13,on S.W.faces.
Land, mountainous,
Soil,gumbo, 3rd rate.
Mountainous land 80.00 chs.

N.54°17'W.
on the 26th mile.

Over mountainous land.
2.00 Top and descend mountainous land bears N.E. and S.W.
27.34 Foot, and drain 50 links wide, course N.E.
31.00 Drain 50 links wide, course N.E., in ravine 100 ft. deep.
Difference bet. measurements of 40.00 chs. by the two sets of chainmen is 6 links; position of middle point,
by 1st set, 39.97 chs.
by 2nd set, 40.03 chs.; the mean of which is

40.00 Deposit a marked stone 12 ins.in the ground for ½ mile corner; dig pits 36x36x12 ins. N.E. and S.W.of corner 5 ft.dist. and raise a mound of earth 5 ft.base, 2½ ft.high, over deposit. In S.W.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground,marked:
½ M.,on S.W.face.
47.00 Drain 50 links wide, course east; thence ascend.
62.00 Top of ridge and wagon road bears east and west; thence over ridges.
72.00 Top of ridge bears north and south.
79.80 Wire fence bears N.E. and S.W.
Difference bet. measurements of 80.00 chs. by the two sets of chainmen is 9 links; position of middle point,
by 1st set, 80.05½ chs.
by 2nd set, 79.94½ chs.; the mean of which is

80.00 Deposit a marked stone 12 ins.in the ground for the 26th mile corner; dig pits 36x36x12 ins. N.E. and S.W. of corner 5 ft.dist. and raise a mound of earth 5 ft.base, 2½ ft.high, over deposit. In S.W.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the

ground,marked:
26 M.,on S.E.,
Ft.R.M.R., on N.E. and
T.95 N.R.68 W.S.11,on S.W.faces.
Land,hilly and mountainous,
Soil,gumbo, 3rd rate.
Mountainous land 80.00 chs.

N.54°17'W.
on the 27th mile.

Over mountainous land.
17.48 Wire fence bears N.E. and S.W.
25.90 Foot, and drain 60 links wide, course north; ascend.
32.00 Top of ridge bears N.E. and S.W.
Difference bet. measurements of 40.00 chs. by the two sets of chainmen is 10 links; position of middle point,
by 1st set, 39.95 chs.
by 2nd set, 40.05 chs.; the mean of which is
40.00 Deposit a marked stone 12 ins.in the ground for ½ mile corner; dig pits 36x36x12 ins. N.E. and S.W.of corner 5 ft.dist. and raise a mound of earth 5 ft.base, 2½ ft.high, over deposit. In S.W.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground,marked:
½ M.,on S.E.face.
This corner stands at head of small drain, course north.
52.21 Top of ridge and wagon road, bears north and south; descend.
74.00 Foot, and drain 90 links wide,course north; thence ascend.
Difference bet. measurements of 80.00 chs. by the two sets of chainmen is 14 links; position of middle point,
by 1st set, 79.93 chs.
by 2nd set, 80.07 chs.; the mean of which is
80.00 Deposit a marked stone 12 ins.in the ground for the 27th mile corner; dig pits 36x36x12 ins. N.E. and S.W. of corner 5 ft.dist. and raise a mound of earth 5 ft. base, 2½ ft.high, over deposit. In S.W. pit drive a stake 2 ft.long,2 ins.square,12 ins. in the ground, marked:
27 M.,on S.E.,
Ft. R.M.R., on N.E. and
T.95 N.R.68 W.S.3,on S.W.faces
Land, mountainous,
Soil,2nd to 4th rate.
Mountainous land 80.00 chs.

August 30, at 4 h. 45 m. p.m., l.m.t., I set off 43°04' on the latitude arc and 8°52' N.on the decl.arc and determine a true meridian at the 27th mile corner.

Thence I run

N.54°17'W.
on the 28th mile. Over mountainous land.
Ascending ridge.
11.65 Top of ridge and wagon road, bears north and south; thence across ridge.
17.50 Top bears north and south; descend.
Difference bet. measurements of 40.00 chs. by the two sets of chainmen is 4 links; position of middle point,
by 1st set 39.98 chs.
by 2nd set, 40.02 chs.; the mean of which is
40.00 Deposit a marked stone 12 ins.in the ground for ½ mile corner; dig pits 36x36x12 ins. N.E. and S.W.of cor. 5 ft.dist. and raise a mound of earth 5 ft.base, 2½ ft.high, over deposit. In S.W.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground,marked:
½ M.,on S.W.face.
51.84 Foot, and South Scalp creek, dry, 25 links wide, course east; brush and scattering trees in the bends; ascend.
72.00 Top of hills bears north and south; thence over rolling land.
Difference bet. measurements of 80.00 chs. by the two sets of chainmen is 6 links; position of middle point,
by 1st set 79.97 chs.
by 2nd set, 80.03 chs.; the mean of which is
80.00 Deposit a marked stone 12 ins.in the ground for the 28th mile corner; dig pits 36x36x12 ins. N.E. and S.W.of corner 5 ft.dist. and raise a mound of earth 5 ft.base, 2½ ft.high, over deposit. In S.W.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground,marked:
28 M.,on S.E.,
Ft.R.M.R.,on N.E. and
T.95 N.R.68 W.S.3,on S.W.faces.
Land,rolling and mountainous,
Soil,gumbo, 3rd rate.
Mountainous land 72.00 chs.

August 30, 1895.

August 31, at 7h. a.m., l.m.t., I set off 43°04.5' on the latitude arc and 8°39.5' N.on the decl.arc and determine a true meridian with the solar at the 28th mile corner,

Thence I run

N.54°17'W.
on the 29th mile.

Over rolling land.
7.08 Wagon road and top of hills bears N.E. and S.W.; descend in ravine.
24.70 Foot, and drain 15 links wide, course north; ascend.
29.00 Top of hill bears N.E. and S.W.; thence over rolling land.
30.00 House of J.W.Gibson bears S.35°43'W., 1.25 chs.dist.
32.00 Enter field bears east and west.
39.00 Leave field, bears east and west.
Difference bet. measurements of 40.00 chs. by the two sets of chainmen is 8 links; position of middle point,
by 1st set 40.04 chs.
by 2nd set, 39.96 chs.; the mean of which is
40.00 Deposit a marked stone 12 ins.in the ground for ¼ mile corner; dig pits 36x36x12 ins. N.E. and S.W. of cor. 5 ft.dist. and raise a mound of earth 5 ft.base, 2½ ft.high, over deposit. In S.W.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground,marked:
¼ M.,on S.E.face.
63.00 Top of hills bears N.E. and S.W.
Descend mountainous land.
Difference bet. measurements of 80.00 chs. by the two sets of chainmen is 14 links; position of middle point,
by 1st set, 80.07 chs.
by 2nd set, 79.93 chs.; the mean of which is
80.00 Deposit a marked stone 12 ins.in the ground for the 29th mile corner; dig pits 36x36x12 ins. N.E. and S.W. of corner 5 ft.dist. and raise a mound of earth 5 ft.base, 2½ ft.high, over deposit. In S.W.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground,marked:
29 M., on S.E.,
Ft.R.M.R., on N.E. and
T.96 N.R.68 W.S.33, on S.W.faces.
Land,rolling and mountainous,
Soil,2nd and 3rd rate.
Mountainous land 17.00 chs.

N.54°17'W.
on the 30th mile corner.

Over mountainous land.
25.60 North Scalp creek, dry, 50 links wide, course N.E.; thick brush and scattering trees along same. Ascend 60 ft. to iron monument.
31.00 Drain 25 links wide, course south.
36.71 The iron post at west corner of the reservation, which

is a cast-iron post 4½ ft. above ground, 6x6 ins. square, marked:
U.S.R.
I dig pits 36x36x12 ins. N.E. and S.E.of post 5 ft. dist. and raise a mound of earth 5 ft.base, 2½ ft. high, around post.
Land, mountainous,
Soil, 3rd and 4th rate.
Mountainous land 36.71 chs.

Having located the iron post at the west corner of the reservation, and the terminal post near the Missouri river, while subdividing township 96 north, range 68 west, I calculate therefrom a course on which to run a random line between said posts,

Therefore I run

N.32°35'E.
on a random line from the iron post at the west corner of the reservation along the N.W.boundary, and at 4 miles 30.80 chs. intersect 92 links S.57°35'E. of the terminal post. The course of the N.W. boundary is therefore N.32°26'E.

I return to the iron post at the west corner, which is already stated to be 36.71 chs.dist. from the 29th mile corner, and retrace the N.W. boundary of the reservation. The latitude of this iron post to appear on the diagram is,
latitude 43°05.5'--- longitude 98°54'W.

Thence I run

N.32°26'E.
on the 30th mile.
Over mountainous land
Descending 30 ft. to a drain.
Chainage counting from the 29th mile corner.
36.71 The iron post.
37.70 Drain 10 links wide,course S.E.; thence ascend 150 ft.

Difference bet. measurements of 40.00 chs. by the two sets of chainmen is 4 links; position of middle point,
by 1st set, 39.98 chs.
by 2nd set, 40.02 chs.; the mean of which is
40.00 Deposit a marked stone 12 ins. in the ground for ¼ mile corner; dig pits 36x36x12 ins. S.E. and N.W. of cor. 5 ft.dist. and raise a mound of earth 5 ft.base, 2½ ft.high, over deposit. In N.W.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground, marked
¼ M.,on S.W.face.
54.00 Top of ridge bears N.E. and S.W.; thence descend.

72.35 Foot, and drain 20 links wide, course N.E.; in brush ravine; thence ascend.
79.80 Top of ridge bears east and west; thence descend.
Difference bet. measurements of 80.00 chs. by the two sets of chainmen is 6 links; position of middle point,
by 1st set, 79.97 chs.
by 2nd set, 80.03 chs.; the mean of which is
80.00 Deposit a marked stone 12 ins.in the ground for the 30th mile corner; dig pits 36x36x12 ins. S.E. and N.W.of corner 5 ft·dist. and raise a mound of earth 5 ft.base, 2½ ft.high, over deposit. In N.W.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground,marked:
30 M., on S.W.,
T.96 N.R.68 W.S.28, on N.W.
Ft. R.M.R., on S.E. faces.
Land,mountainous,
Soil, gumbo, 3rd rate.
Mountainous land, 43.29 chs.

N·32°26'E.
on the 31st mile.

Over mountainous land.
Descending.
9.50 Foot, and drain 30 links wide, course east; thence ascend.
24.60 Top of ridge course east and west; thence over ridges.
38.50 Top of ridge bears east and west; thence over ridges.
Difference bet. measurements of 40.00 chs. by the two sets of chainmen is 6 links; position of middle point,
by 1st set, 39.97 chs.
by 2nd set, 40.03 chs.; the mean of which is
40.00 Deposit a marked stone 12 ins.in the ground for ½ mile corner; dig pits 36x36x12 ins. S.E. and N.W.of cor. 5 ft·dist. and raise a mound of earth 5 ft.base, 2½ ft.high, over deposit. In N.W.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground,marked:
½ M.,on S.W.face.
55.00 Foot, and drain 20 links wide, course east;
Wagon road along same; thence ascend.
79.00 Top of ridge bears east and west; thence descend.
Difference bet. measurements of 80.00 chs. by the two sets of chainmen is 6 links; position of middle point,
by 1st set, 79.97 chs.
by 2nd set, 80.03 chs.; the mean of which is
80.00 Deposit a marked stone 12 ins.in the ground for the 31st mile cor.; dig pits 36x36x12 ins. S.E. and N.W.of corner 5 ft·dist. and raise a mound of earth 5 ft.

base, 2½ ft.high, over deposit. In N.W.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground, marked:
31 M.,on S.W.,
Ft.R.M.R., on S.E. and
T.96 N.R.68 W.S.28,on N.W.faces.
Land,mountainous,
Soil,gumbo, 3rd and 4th rate.
Mountainous land 80.00 chs.

August 31, at this corner I set off 8°34'N. on the decl. arc, and at 12m. 1.m.t., observe the sun on the meridian; the resulting latitude is 43°06.5', which is 0.2' less than the proper latitude.

N.32°26'E.
on the 32nd mile .

Over mountainous land, descending to drain.
11.72 Foot, and drain 50 links wide, course east, in brush ravine; thence ascend.
12.10 Wagon road bears east and west.
30.00 Top of ridge bears east and west; descend.
Difference bet. measurements of 40.00 chs. by the two sets of chainmen is 8 links; position of middle point,
by 1st set 40.04 chs.
by 2nd set, 39.96 chs.; the mean of which is
40.00 Deposit a marked stone 12 ins.in the ground for ½ mile corner; dig pits 36x36x12 ins. S.E. and N.W. of cor. 5 ft·dist. and raise a mound of earth 5 ft.base, 2½ ft.high, over deposit. In N.W.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground, marked:
½ M.,on S.W.face.
In head of small drain 10 links wide, course N.W.; ascend.
51.65 Top of west point of ridge; descend 200 ft.
78.60 Foot, and dry creek bed, 50 links wide,course N.E.; brush and scattering trees along creek.
Difference bet. measurements of 80.00 chs. by the two sets of chainmen is 14 links; position of middle point,
by 1st set 80.07 chs.
by 2nd set,79.93 chs.; the mean of which is
80.00 Deposit a marked stone 12 ins.in the ground for the 32nd mile corner; dig pits 36x36x12 ins. S.E. and N.W. of corner 5 ft·dist. and raise a mound of earth 5 ft.base, 2½ ft.high, over deposit. In N.W.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground, marked:

32 M.,on S.W.
Ft.R.M.R., on S.E. and
T.96 N.R.68 W.S.22,on N.W.faces
Land,mountainous,
Soil, gumbo, 3rd and 4th rate.
Mountainous land 80.00 chs.

N.32°26'E.
on the 33rd mile.

Ascending mountainous land.

29.60 Top of ridge bears east and west, near east point, descend along N.E.slopes
Difference bet. measurements of 40.00 chs. by the two sets of chainmen is 10 links; position of middle point,
by 1st set 39.95 chs.
by 2nd set, 40.05 chs.; the mean of which is

40.00 Deposit a marked stone 12 ins.in the ground for ½ mile corner; dig pits 36x36x12 ins. S.E. and N.W.of cor. 5 ft.dist. and raise a mound of earth 5 ft.base, 2½ ft.high, over deposit. In N.W.pit drive a stake 2 ft.long, 2 ins.square,12 ins.in the ground,marked:
½ M.,on S.W. face.

75.35 Wagon road bears N.W. and S.E.
Difference bet. measurements of 80.00 chs. by the two sets of chainmen is 15 links; position of middle point
by 1st set, 79.92½chs.
by 2nd set, 80.07½ chs.; the mean of which is

80.00 Deposit a marked stone 12 ins.in the ground for the 33rd mile corner; dig pits 36x36x12 ins. S.E. and N.W.of corner 5 ft.dist. and raise a mound of earth 5 ft.base, 2½ ft.high, over deposit. In N.W.pit drive a stake 2 ft.long,2 ins.square, 12 ins.in the ground,marked:
33 M.,on S.W.
Ft.R.M.R.,on S.E. and
T.96 N.R.68 W.S.15, on N.W.faces.
Land, mountainous,
Soil,gumbo, 3rd and 4th rate.
Mountainous land 80.00 chs.

N.32°26'E.
on the 34th mile.

Descending to creek.

15.24 Foot of hills bears N.W. and S.E.; and North Scalp

creek, dry,course N.W.; thence through dense brush and timber; in valley.

19.80 Same creek, dry, 25 links wide,course east.

26.00 Wagon road bears N.W. and S.E.

27.10 Same creek, dry, 15 links wide,course S.W.

32.50 Leave brush and timber bears N.W. and S.E.; ascend high hills.
Difference bet.measurements of 40.00 chs. by the two sets of chainmen is 2 links; position of middle point
by 1st set, 39.99 chs.
by 2nd set, 40.01 chs; the mean of which is

40.00 Deposit a marked stone 12 ins.in the ground for ½ mile corner; dig pits 36x36x12 ins. S.E. and N.W.of cor. 5 ft.dist. and raise a mound of earth 5 ft. base, 2½ ft.high, over deposit. In N.W.pit drive a stake 2 ft.long,2 ins.square,12 ins.in the ground,marked:
½ M.,on S.W.face.

59.60 Top of ridge bears N.W. and S.E.; thence descend.

67.51 The terminal monument, which is a cast iron post 4½ ft. above ground 6x6 ins. square, marked
U.S.R.
I dig pits 36x36x12 ins. S.E. and N.W.of post 5 ft. dist. and raise a mound of earth 5 ft.base, 2½ ft. high, around post.
This post stands on a hill about 60 ft.above, and some distance back, from the Missouri river, therefore in accordance with special instructions I continue the boundary line to the right bank of the river.
August 31, at this post I set off 43°09' on the latitude arc and 8°31'N.on the decl.arc and at 4h.10m. p.m., l.m.t. determine a true line with the solar,

Thence I run

N.32°26'E.
on the 34th mile.
Descending.
Chainage counting from the 33rd mile corner.

67.51 The terminal monument above mentioned.

76.00 Enter brush and timbered bottom bears east and west.
Difference bet. measurements of 80.00 chs. by the two sets of chainmen is 6 links; position of middle point,
by 1st set, 79.97 chs.
by 2nd set, 80.03 chs.; the mean of which is

80.00 Set a hackberry post 3 ft.long, 5 ins.square, with charred stake 24 ins.in the ground, for the 34th mile corner,marked:
34 M.,on the S.W.
Ft.R.M.R., on the S.E. and
T.96 N.R.68 W.S.11,on N.W.faces.

From which

an ash 3 ins. in diam. bears S.19°E., 9 links dist., marked: Ft.R.M.R., 34 M.B.T.
an elm 3 ins.in diam. bears N.0°15'W., 41 links dist. marked: T.96 N.R.68 W.S.11, M.R.B.T.
Land, level to hilly,
Soil, 3rd rate.
Dense brush 21·26 chs.

N.32°26'E.
on the 35th mile.

Through timber and dense brush.

4.10 Right bank of the Missouri river 12 ft.high, cutting. Set a red cedar post 3 ft.long, 4 ins.square, 24 ins. in the ground, for meander corner, marked:
M.C.,on N.E.,
P.L.,on N.W. and
Ft.R.M.R.,on S.E.faces

From which

a cottonwood 7 ins. in diam. bears S.46°47'W., 65 links dist., marked: P.L.M.C.B.T.
an elm 8 ins.in diam. bears S.23°E., 54 links dist., marked: Ft.R.M.R., M.C.B.T.
Land, level,
Soil, alluvial, 2nd rate.
Dense brush and rimber 4.10 chs.

There being no island in the Missouri river that would be intersected by this line, prolonged as shown by the diagram furnished me by the surveyor general, I finish the survey at this meander corner.

August 31,1895.

To obtain the course and distance between the meander corners on the boundary line, and across the Missouri river, I proceed as follows:

I place a flag at the meander corner on the right bank. I cross over to the meander corner on the left bank. From here flag on right bank bears S.51°33'W. I chain a base N.42°W., 41.00 chs. to a point from which flag bears S.21°30'W. The angles are 86°27', 63°30' and 30°03', their sum being 180°00'. I compute the distance therefrom as follows:

Nat sin 63°30' ÷ 30°03' ∴ 41 chs =
Nat 894934 ÷ 500755 ∴ 41 chs = 73.27½ chs.

$$\frac{\sin 63°30'}{\sin 30°03'} \times \text{base, or} \quad \frac{.89493}{.500.75} \times 41. = 73.28 \text{ chs.}$$

OK Schlegel

the course is N.51°33'E.
the distance is 73.28 chs.

The line on the right bank extended would pass some distance west of the town of Wheeler.

-General Description-

From the Missouri river to near the 3rd mile corner, the land is very broken and rough. From near the 3rd mile corner to near the 23rd mile corner, the land is generally rolling prairie; well settled. Thickly settled in the state of Nebraska. From near the 23rd mile corner to the Missouri river, near the terminal monument, the land is very rough and broken. The land in the abandoned Military reservation is mostly very rough and broken.

Note:- Through township 95 north, range 67 west, the survey of the reservation boundary was made prior to the subdivisional surveys of said township. The corners along the reservation boundary was completed at the time of making the subdivisional surveys and the nmber of the section in which the mile corners are situated obtained therefrom.

Charles H.Bates,

U.S.Deputy Surveyor.

From this back to page 18 applies to Survey of Reserve here in Datata

LIST OF NAMES.

A list of the names of the individuals employed by Charles H. Bates, United States Deputy Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of the bdy. line of the Abandoned Fort Randall Mil. Res. in South Dakota and Nebraska showing the respective capacities in which they acted:

Tim Burns, Chainman.
E. W. Hinsdale, Chainman.
C. H. Armstrong, Chainman and Moundman.
H. M. Finotti, Chainman and Moundman.
E. R. Cook, Moundman, ~~Axman.~~
A. M. Fox, Moundman, ~~Axman.~~
C. Wright, Moundman and Flagman.

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted Charles H. Bates, United States Deputy Surveyor, in surveying all those parts or portions of the boundary line of the Abandoned Fort Randall Military Reservation in South Dakota and Nebraska ~~of the base and meridian, of~~, which are represented in the foregoing field notes as having been surveyed by him and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the United States Surveyor General for South Dakota

Tim Burns, Chainman.
E. W. Hinsdale, Chainman.
C. H. Armstrong, Moundman.
H. M. Finotti, Moundman.
C. R. Cook, Axman.
A. M. Fox, Axman.
C. Wright, Flagman.

Subscribed and sworn to before me this 6th day of October, 1895.

B. C. Woolley
Notary Public

SEAL

Final Oath of United States Deputy Surveyor.

I, Charles H. Bates United States Deputy Surveyor, do solemnly swear that, in pursuance of ~~instructions~~ a contract received from Richard B. Hughes, United States Surveyor General for South Dakota, bearing date of the 28th day of March, 1895, I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the United States Surveyor General for South Dakota, the Manual of Surveying Instructions, and the laws of the United States, surveyed ~~all those parts or portions of~~ the boundary line of the abandoned Fort Randall Military Reservation in South Dakota and Nebraska ~~of the base and meridian, in the of~~, which are represented in the foregoing field notes as having been surveyed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the United States Surveyor General for South Dakota and in the specific manner described in the field notes, and that the foregoing are the ~~true~~ original field notes of such survey; and should any fraud be detected, I will suffer the penalty of perjury under the provisions of an Act of Congress approved August 8, 1846. Said field notes are contained in one Book lettered "K"

Charles H. Bates
United States Deputy Surveyor.

Subscribed by said Charles H. Bates, United States Deputy Surveyor, and sworn to before me this 12th day of December, 1895.

J. T. Smith Clerk of the Circuit Court within and for Yankton County, South Dakota

SEAL

APPROVAL.

Office of the United States Surveyor General,

Huron S. D. July 11, 1896.

The foregoing field notes ~~of the survey of~~ contained in one Book lettered "K" of the survey of the boundary line of the Abandoned Fort Randall Military Reservation in South Dakota and Nebraska executed by Charles H. Bates under his Contract No. 106, dated March 28, 1895, having been critically examined, the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

Richard B. Hughes
United States Surveyor General.

I certify that the foregoing transcript of the field notes of the above-described surveys in South Dakota, has been correctly copied from the original notes on file in this office.

Richard B. Hughes
United States Surveyor General.

FIELD NOTES

OF THE SURVEY OF

the

Eighth Standard Parallel North

through

Ranges Nos 9 & 10 West

Of the Sixth Principal Meridian,

in the State of Nebraska

AS SURVEYED BY

Charles A. Nippel, U. S. ~~Deputy~~ Surveyor,

Under his Contract ~~No.~~ _____, dated March 31st, 1890.

Survey commenced May 15th, 1890.

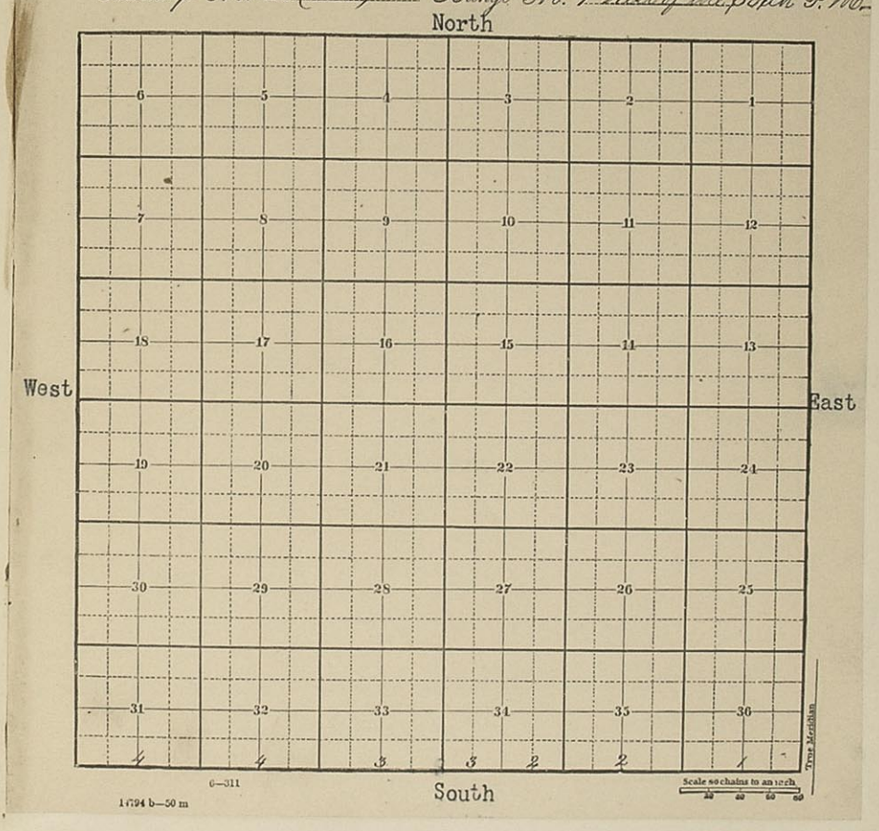
Survey completed May 16th, 1890.

(8780—2,000.) 6—151

Robert A. Hindman,	Chainman.
William R. Pratt,	Chainman.
Charles Baker,	Chainman.
Joseph Kukral,	Axeman.
Fritz A. Robert,	Axeman.

INDEX DIAGRAM.

Township No. 33 North, Range No. 9 West of the Sixth P. M.



6—311

14794 b—50 m

We, Robert A. Hindman and William R. Pratt and Charles Baker and

do solemnly swear that we will well and faithfully execute the duties of chain carriers; that we will level the chain over even and uneven ground, and plumb the tally-pins either by sticking or dropping the same; that we will report the true distance to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance with instructions given us in the survey of the Eighth Standard Parallel North, through Ranges Nos. 9 and 10 West of the Sixth Principal Meridian

Robert A. Hindman, Chainman.
William R. Pratt, Chainman.
Charles Baker, Chainman.
Adolf Selber, Chainman.

Subscribed and sworn to before me this 10th day of May, 1890.

Seal

Jac Randa
Notary Public

We, Joseph Kukral and Fritz H. Robert

do solemnly swear that we will well and truly perform the duties of axemen in the establishment of corners and other duties, according to instructions given us, and to the best of our skill and ability, in the survey of the Eighth Standard Parallel North, through Ranges Nos 9 and 10 West of the Sixth Principal Meridian

Subscribed and sworn to before me this 10th day of May, 1890.

Seal

Jac Randa
Notary Public

Joseph Kukral, Axeman.
Fritz H. Robert, Axeman.

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Duplicate Nuffel

Eighth standard parallel North through range No 9 West.

Survey commenced, May 15th 1890
With a Henry Ware, Improved Theodolite.
at the standard cor. to township 33 North.
Ranges 8 and 9. West.
I observed Polaris at 3.47. A.M.
and find its Magnetic, bearing to be N. 9° 57' W.
North end of needle 9° 57' East.
The Azimuth by table 1° 44' East
The sum is the variation. 11° 41' East.
I lay off the Azimuth, and mark the true
meridian so determined by driving a picket
3.00 chs. North of cor.
At 6.00. A.M. I find the Magnetic
bearing of the line established this morning to be
N 11° 43' W. and the variation 11° 43' E.

I begin at the standard Cor. to township 33. N.
Ranges 8. and 9 West, of the 6th P.M. which
is a sandstone 8 X 12 X 6 ins. above ground firmly
set. Marked —
S. 33. on N.
R. 8. on E. and,
R. 9 on W. faces, with 6 notches on N. E. and
W. faces.
Thence I run
West on the S. boundary of sec. 36.
var. 11° 43' E.
Over gently rolling prairie.
40.00 Set a sandstone, 24 X 6 X 6 ins. 18 ins. in the
ground for standard 1/4 sec. cor. marked S. C.
1/4 on N. face, dug pits 18 X 18 X 12 ins E. and W.
of stone, 6 ft. dist, and raised a mound of earth,
alongside.
80.00 Set a sandstone 19 X 10 X 5 ins. 13 ins in the
ground for standard cor to secs. 35 and 36
marked S. C. with 1 notch on E and 5 notches
on W. edges dug pits 18 X 18 X 12 ins. North, East
and West, of stone, 6 ft. dist. and raised a
mound of earth alongside
Land: gently rolling prairie.
Soil. Dark, sandy loam 2nd rate.

No timber.

West on S. boundary of sec. 35.
var. 11° 43' E.
Over rolling prairie.
8.50 Road 60 lks. wide bears, W. N. W. and E. S. E.
39.00 Leave rolling prairie, and descend.
40.00 Set a sandstone 16 X 11 X 4 ins. 10 ins. in the ground
for standard 1/4 sec. cor. marked, S. C. 1/4 on N
face, dug pits, 18 X 18 X 12 ins, E. and W. of stone
6 ft. dist. and raised a mound of earth alongside.
41.94 Ravine. course S. about 4 ft. deep, and ascend.
50.50 Enter level prairie.
64.00 Leave same, and descend.
73.00 Ascend.
77.00 Top of ridge, about 30 ft. high, and descend.
80.00 Set a sandstone, 16 X 14 X 6 ins 10 ins in the ground
for standard cor. to secs. 34 and 35. marked
S. C. with 2 notches on E. and 4 notches on
W. edges, dug pits 18 X 18 X 12 ins, North, East
and W. of stone, 6 ft. dist. and raised a mound
of earth alongside:
Land: rolling and hilly. 53.50 chs. rolling.
and 26.50 chs. hilly.
Soil. rolling land sandy loam 2nd rate.
Hilly land gravelly 4th rate.
No timber.

West on S. boundary of sec 34.
var. 11° 43' E.
Over hilly land.
1.30 Ascend.
4.15 Top of ridge, about 20 ft. high, and descend.
8.90 Ravine: course S about 3 ft. deep, and ascend.
17.15 Top of ridge about 45 ft. high and descend.
21.00 Ascend.
22.40 Top of ridge about 30 ft high and descend.
36.00 Ascend.
40.00 Top of ridge, about 60 ft. high.
Set a sandstone 20 X 8 X 6 ins. 15 ins in the ground,
for standard 1/4 sec. cor. marked S. C. 1/4 on N.

face, dug pits 18X18X12 ins. E. and W. of stone, 6 ft. dist. and raised a mound of earth along side, des cend
44.60 Road 50 lks wide, bears N. 10° W. and S. 10° E. the middle of track washed out about 6 ft. deep.
63.80. Ravine course: S. 20° E. about 5 ft. deep, and ascend.
76.25 Top of ridge, about 40 ft. high, and descend,
80.00 Set a sandstone 25X12X6 ins. 18 ins. in the ground for standard cor. to secs. 33 and 34. marked S.C. with 3 notches on E. and W. edges., dug pits, 18X18X12 ins. N. E. and W. of stone, 6 ft. dist. and raised a mound of earth alongside,

Land: broken and hilly.
Soil: Sandy yellow clay 3rd rate.
No timber.

West on S. boundary of secs. 33.
Var: 11° 43' E.
Descend gradually.
16.40 Ravine: course S. 25° E about 12 ft deep and ascend.
22.00 Top of ridge, about 40 ft. high, and descend gradually.
35.60 Ravine: course S. 42° E about 6 ft. deep, and ascend.
40.00 Set a sandstone 17X10X6 ins. 10 ins in the ground for stand and 1/4 sec. cor. marked S.C. 1/4 on N. face dug pits, 18X18X12 ins. E and W. of stone, 6 ft. dist. and raised a mound of earth along side,
46.30 Top of ridge, about 25 ft. high and descend.
54.00 Enter level prairie.
74.30 Leave same, and ascend,
76.10 Top of ridge, about 20 ft. high, and descend.
80.00 Set a sandstone 24X16X5 ins. 18 ins, in the ground, for standard cor. to secs. 32 and 33. marked S.C. with 4 notches on E and 2 notches on W. edges. dug pits 18X18X12 ins, N. E. and W. of stone 6 ft. dist. and raised a mound of earth along side.

Land: hilly and level. 60 chs. hilly and 20 chs. level.
Soil: hilly land yellow clay. 3rd rate. Level prairie, sandy loam 2nd rate.
No timber.

West on S. boundary sec. 32.
Var. 11° 43' E.
Over nearly level ground.
12.10 Ascend abruptly.
13.20 Top of hill, about 60 ft. high, and descend gradually
29.70 Ascend.
32.20 Top of ridge, about 50 ft. high, and descend.
37.00 Enter slightly rolling prairie,
40.00 Set a sandstone 16X13X5 ins. 10 ins. in the ground for standard 1/4 sec. cor. marked S.C. 1/4 on N. face, dug pits, 18X18X12 ins. E. and W. of stone. 6 ft. dist. and raised a mound of earth alongside.
80.00 Set a sandstone 15X12X4 ins. 10 ins. in the ground for standard cor. to secs. 31 and 32 marked S.C. with 5 notches on E. and 1 notch on W. edges. dug pits 18X18X12 ins. N. E. and W. of stone, 6 ft. dist. and raised a mound of earth alongside:

Land: hilly and rolling. 55 chs. rolling and 25 chs. hilly.
Soil: hilly land sandy clay and gravel. 4th rate. unfit for cultivation.
Rolling prairie, sandy loam 2nd rate.
No timber.

West on S. boundary sec. 81.
Var. 11° 43' E.
Over rolling prairie.
21.80. Leave rolling prairie and enter ravine 40 ft. deep.
22.70 Bottom of same, timbered, with Elm. Burr Oak, heavy brush, and vines. course S. 28° E.
24.00 Leave same, and Enter rolling prairie.
40.00 Set a sandstone 18X11X6 ins. 14 ins. in the ground, for standard 1/4 sec. cor. marked S.C. 1/4 on N. face, dug pits, 18X18X12 ins E. and W. of stone 6 ft. dist. and raised a mound of earth alongside.
61.60 Ravine: course S. about 6 ft. deep.
80.00 Set a sandstone 19X13X7 ins. 13 ins. in the ground for standard cor. to Twps. 33 N. Ranges. 9 and 10. W. marked S.C with 6 notches on N. E.. and W. edges. dug pits, 24X18X12 ins, crosswise on each line N.E.. and W. of stone, 6 ft. dist. and raised a.

mound of earth alongside.

Land: rolling prairie.

Soil: sandy loam 2nd rate.

Timber: Elm bur Oak and cottonwood, in the ravine, abovementioned.

May 15th 1890.

West on S. boundary sec 36.

var. 11°43' E.

Enter hilly land, descending.

11.15 Ravine: course S. about 6 ft. deep, and ascend gradually.

14.50 Top of ridge about 20 ft. high, and descend.

21.80. Ravine: course S. about 10 ft. deep. and ascend gradually.

36.20 Ravine: course S. about 2 chs. then turns E. and ascend.

40.00 Set a sandstone 19X11X5 ins. 12 ins. in the ground. on S.E. slope, for standard 1/4 sec. cor. marked S.C. 1/4 on N. face. dug pits 18X18X 12 ins. E. and W. of stone 6 ft. dist. and raised a mound of earth alongside.

49.70. Top of ridge, about 50 ft. high and descend.

64.50 Ravine: course S. about 5 ft. deep. and ascend steep hill, about 120 ft. high.

80.00 Set a sandstone 17X14X5 ins. 12 ins. in the ground. for standard cor. to secs. 35 and 36. marked S.C. with 1 notch on E. and 5 notches on W. edges. dug pits 18X18X12 ins. N. E. and W. of stone 6 ft. deep. and raised a mound of earth, alongside.

Land: hilly

Soil: sandy loam and gravel 3rd rate.

No timber.

West on S. boundary of sec. 35.

var. 11° 43' E.

Ascending.

1.20 Top of hill, and enter rolling prairie.

40.00 Set a sandstone 21X14X4 ins. 16 ins. in the ground. for standard 1/4 sec. cor. marked S.C. 1/4 on N. face. dug pits 18X18X12 ins. E. and W. of stone 6 ft dist. and raised a mound of earth alongside.

44.00 Leave rolling prairie, and enter ravine, about 80 ft deep, descending abruptly.

47.60 Bottom of same, course S. and ascend steep hill.

5350 Top of hill about 90 ft high and descend.

64.20 Dry run: course S. and ascend.

67.60 Over side, hill and descend.

73.00 Foot of hill, and ascend abruptly.

80.00 Top of hill, about 150 ft. high.

Set a sandstone 22X14X6 ins. 16 ins. in the ground for standard cor. to secs. 34 and 35. marked S.C. with 2 notches on E. and 4 notches on W. edges. dug pits 18X18X 12 ins. N. E. and W. of stone, 6 ft. dist. and raised a mound of earth alongside.

Land: rolling and hilly. 43.00 chs. rolling and 37.00 chs. hilly.

Soil: rolling prairie: sandy loam 2nd rate. hills. gravelly. unfit for cultivation 4th rate. No timber.

West on S. boundary sec. 34.

var. 11° 43' E.

Over broken hills.

5.00 Road 80 lks wide, bears. N. 25° E and S. 60° W.

24.00 Ravine: course N. 22° W. and ascend.

35.60 Top of ridge, about 40 ft. high and descend.

40.00 Set a sandstone: 17.X10X3 ins. 12 ins in the ground for standard 1/4 sec. cor. marked S.C. 1/4 on N. face. dug pits. 18X18X12 ins. E. and W. of stone, 6 ft. dist. and raised a mound of earth alongside.

54.20. Ravine: course N. about 8 ft. deep, and ascend.

59.50 Top of ridge, about 90 ft. high: and descend,

78.80. Ravine: course N. 45° W. about 4 ft. deep, and ascend.

80.00 Set a sandstone 27X20X6 ins. 18 ins in the ground. on N.E. slope, for standard. cor. to secs. 33. and 34. marked S.C. with 3 notches on E. and W. edges. dug pits 18X18X 12 ins N.E. and W. of stone, 6 ft. dist. and raised a mound of earth, alongside.

Land: hilly

Soil: sandy loam. 2nd rate.

No timber.

West on S. boundary sec. 33.

var. 11° 43' E.

Over broken hills.

2.20 Over spur, and descend.
7.00 Ravine, course N. about 8 ft. deep, and ascend.
15.00 Top of ridge, about 80 ft. high, and enter rolling prairie.
20.00 Descend a gradual slope.
34.40 Ravine: course N. 20° W. about 3 ft. deep
40.00 Set a sandstone 18 X 12 X 4 ins. 13 ins. in the ground for standard 1/4 sec. cor. marked S. C. 1/4 on N. face, dug pits 18 X 18 X 12 ins, E. and W. of stone, 6 ft. dist. and raised a mound of earth alongside.
41.00 Top of ridge, about 40 ft. high. a road 50 lks. wide: bears N. 30° W. and S. 45° E. and leave rolling prairie enter hilly land descending.
51.50 Ravine: course S. and ascend.
53.00 Top of hill, about 50 ft. high. and descend abruptly.
59.00 Bottom of ravine, course S. 5° E. about 20 ft. deep. and ascend abruptly.
72.40 Top of hill, about 300 ft. high, and descend along S. slope.
80.00 Set a sandstone 20 X 12 X 5 ins. 13 ins in the ground for standard cor to secs. 32 and 33. marked S. C. with 4 notches on E. and 2 notches on W. edges, dug pits, 18 X 18 X 12 ins. N. E. and W. of stone 6 ft. dist. and raised a mound of earth along side.

Land: hilly and rolling. 54.00 chs. hilly. and 26.00 chs. rolling.
Soil: rolling prairie Sandy loam 2nd rate.
Hills. yellow clay and gravel, 4th rate. unfit for cultivation.
No timber.

West on S. boundary sec. 32.
var. 11° 43' E.
Over broken hills.
10.00 Ravine: course S. about 10 ft. deep.
17.00 Ravine: course S. 20° E. and ascend.
23.30 Top of hill, about 30 ft. high, and descend.
38.00 Ascend, abruptly.
39.30 Top of ridge, about 80 ft. high, and descend.

40.00 Set a sandstone 18 X 18 X 6 ins. 12 ins in the ground for standard 1/4 sec. cor. marked S. C. 1/4 on N. face, dug pits 18 X 18 X 12 ins, E and W. of stone 6 ft. dist. and raised a mound of earth alongside.
40.25 A landslide about 25 ft. deep.
41.50 Foot of same, and ravine, course S. 10° W. about 4 ft. deep.
43.80 Ravine: course S. about 6 ft. deep and ascend.
54.00 Top of hill, about 80 ft. high, and descend.
59.00 Ravine: course S. about 10 ft. deep and ascend.
62.00 Top of hill, about 40 ft. high.
65.00 Ravine: course S. 5 ft. deep and ascend.
70.20 Top of hill, about 60 ft. high, and descend gradually
80.00 Set a sandstone 20 X 12 X 4 ins. 14 ins. in the ground for standard cor. to secs. 31. and 32 marked S. C. with 5 notches on E. and 1 notch on W. edges. dug pits 18 X 18 X 12 ins. N. E. and W. of stone, 6 ft. dist. and raised a mound of earth alongside

Land: hilly and broken.
Soil: yellow clay and gravel 4th rate.
No timber.

West on S. boundary sec. 31.
var. 11° 43' E.
Over broken hills.
4.40 Ravine: course S. about 40 ft. deep, and ascend.
10.00 Top of ridge, about 80 ft. high, and descend.
14.10 Ravine: course S. about 60 ft. deep, and ascend.
18.00 Leave hilly land, and enter rolling prairie.
25.60. Ravine: course S. about 50 ft. deep.
40.00 Set a sandstone 18 X 15 X 4 ins. 12 ins in the ground for stand and 1/4 sec. cor. marked S. C. 1/4 on N. face, dug pits 18 X 18 X 12 ins E and W of stone 6 ft. dist. and raised a mound of earth alongside.
41.00 Leave rolling prairie, and descend.
42.50 Bottom of ravine: course S. about 60 ft. deep and ascend.
45.00. Descend along S. slope to
51.00 Enter low level bottom, subject to inundation.
80.00 Set a sandstone 27 X 13 X 5 ins. 18 ins. in the ground for stand and. cor to Townships. 33. N. Ranges. 10 and 11. West. marked S. C. with

9

Eighth standard parallel, North through Range No 10 West.

6 notches on N. E. and W. edges. dug pits. 24 X 18 X 12 ins. cross ties on each line. N. E. and W. of stone. 6 ft dist and raised a mound of earth alongside.

Land: level rolling and hilly. 29.00 chs. level bottom, 33.00 chs. rolling prairie. and 18 chs. hilly.

Soil: level bottom, black loam, subject to inundation. 3rd rate.

Rolling prairie. sandy dark, loam, 2nd rate.

Hilly land: yellow clay and gravel. 4th rate. unfit for cultivation.

May 16th 1890.

General description.

The line runs over the South slope of the highest divide, between the Niobrara river, and Ponca creek, The land at the foot of the South slope, is mostly level bottoms, covered with an abundant growth of different kinds of grasses, and along the Niobrara river, is a great quantity of young timber. The old timber having been pulled and taken away The land on the North slope, is very broken and hilly.

The streams being dry, with the exception of very few alkaline springs.

Charles A. Neppel
U. S. Surveyor.

List of Names.

A list of the names of the individuals employed by Charles A. Nippel, U. S. ~~Deputy~~ Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of the Eighth Standard Parallel North, Ranges Nos 9 and 10 West of the Sixth Principal Meridian, in the State of Nebraska, showing the respective capacities in which they acted:

Robert A. Hindman,	Chainman.
William R. Pratt,	Chainman.
Charles Baker,	Chainman.
Joseph Kukral,	Axeman.
Fritz A. Robert,	Axeman.
John A. Wilson,	Flagman.

Final Oath of Assistants:

We hereby certify that we assisted Charles A. Nippel, U. S. ~~Deputy~~ Surveyor, in surveying all those parts or portions of the Eighth Standard Parallel North, through Ranges Nos 9 and 10 West of the Sixth Principal Meridian, in the State of Nebraska, as are represented in the foregoing field notes as having been surveyed by him and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the ~~U. S. Surveyor General For~~ Commissioner of the General Land Office

Robert A. Hindman,	Chainman.
William R. Pratt,	Chainman.
Charles Baker,	Chainman.
Adolf Seiler,	Chainman.
Joseph Kukral,	Axeman.
Fritz A. Robert,	Axeman.
John A. Wilson,	Flagman.

Subscribed and sworn to before me this 22d day of November, 1890.

SEAL

Vac Randa
Notary Public

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Final Oath of U. S. Deputy Surveyor.

I, Charles A. Nippel, U. S. ~~Deputy~~ Surveyor, do solemnly swear that, in pursuance of instructions received from the Commissioner of the ~~U. S.~~ ~~Surveyor~~ General ~~for~~ Land Office, bearing date of the thirty-first day of March, 1890, I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the ~~U. S. Surveyor General for~~ Commissioner of the General Land Office, the surveying manual, and the laws of the United States, surveyed all those parts or portions of the Eighth Standard Parallel North, through Ranges No. 9 and 10 West of the Sixth Principal Meridian, in the State of Nebraska, as are represented in the foregoing field notes as having been surveyed by me, and under my directions; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the surveying manual, printed instructions, the special written instructions of the ~~U. S. Surveyor General for~~ Commissioner of the General Land Office and in the specific manner described in the field notes, and that the foregoing are the true field notes of such survey; and should any fraud be detected, I will suffer the penalty of perjury under the provisions of an Act of Congress approved August 8, 1846.

Charles A. Nippel
U. S. ~~Deputy~~ Surveyor.

Subscribed and sworn to before me this 22d day of November, 1890.

SEAL

Vac Randa
Notary Public.

J.W.L.
M.M.S.

Approval.

Department of the Interior
~~Office of the U. S. Surveyor~~ General, Land Office,
Washington, D.C. February 20, 1891.

The foregoing field notes of the survey of the Eighth Standard Parallel North, through Ranges Nos 9 and 10 West of the Sixth Principal Meridian in the State of Nebraska executed by Charles A. Nippel, U. S. surveyor under his Contract ~~No.~~ _____, dated March 31, 1890, having been critically examined, the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

Lewis A. Groff
~~U. S. Surveyor General~~
Commissioner & Ex Officio Sur. Genl. for Nebraska

I certify that the foregoing transcript of the field notes of the above-described surveys in the State of Nebraska, has been correctly copied from the ~~original~~ notes on file in this office.

Lewis A. Groff
~~U. S. Surveyor General.~~
Commissioner and ex officio Sur. Genl. for Nebraska

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(4—679.)

FIELD NOTES

OF THE Re SURVEY OF

a part of the

Exterior Boundaries

of

First Guide Meridian W. in

Township No. 33 North, Range No. 8 West

Of the Sixth Principal Meridian,

in the State of Nebraska

AS SURVEYED BY

Charles A. Nippel, U. S. ~~Deputy~~ Surveyor,

Under his Contract ~~No.~~ _____, dated March 31st, 1890.

Survey commenced May 19th, 1890.

Survey completed May 19th, 1890.

(8780—2,000.) 6—151

Names and Duties of Assistants.

Charles Baker.	Chainman
Fritz Robert.	Chainman.
Joseph Kukral.	Axeman.
John A. Wilson.	Flagman.

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Township No. 35 North, Range No. 8 West

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Preliminary Oaths of Assistants.

We, Charles Baker and Fritz Robert,

do solemnly swear that we will well and faithfully execute the duties of chain carriers; that we will level the chain over even and uneven ground, and plumb the tally-pins either by sticking or dropping the same; that we will report the true distance to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance with instructions given us in the re-survey of ~~the~~ a part of the Exterior Boundaries of Township No. 33 North, Range No. 8 West of the Sixth Principal Meridian.

Charles Baker, Chainman.
Fritz A. Robert, Chainman.
, Chainman.
, Chainman.

Subscribed and sworn to before me this 10th day of May, 1890.

Seal

Vac Randa
Notary Public.

~~We~~ I, Joseph Kukral

do solemnly swear that ~~we~~ I will well and truly perform the duties of axeman in the establishment of corners and other duties, according to instructions given ~~us~~ me, and to the best of ~~our~~ my skill and ability, in the re-survey of the a part of the Exterior Boundaries of Township No. 33 North, Range No. 8 West of the Sixth Principal Meridian.

Subscribed and sworn to before me this 10th day of May, 1890.

Joseph Kukral, Axeman.
, Axeman.

Seal

Vac Randa
Notary Public.

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Secs. 7 & 12 & 1 & 6. Exterior boundaries T. 32. N. R. 8 & 9. W. Chas. A. Nippel US Dep. Surveyor.

Chains	East boundary of fractional T. 32. N. R. 9. W.
	Being unable to find either of the meander corners on the N. and S. shore, of the Island, on the right bank of the Niobrara river, bet. secs. 7. and 12 in fractional Tps. 32. N. Ranges 8. and 9. W.
	I commence at the sec. cor. to secs. 7. 12. 13 and 18. which is an Oak post and charred stake.
	At. 7. 30. A. M. July 9th from a backsight. bet. secs. 13. and 18. I find the magnetic bearing to be S. 11° 41' E.
	Thence I run.
	North bet. secs. 7. and 12.
	Var. 11° 41' E.
	Over rolling prairie
17.50	Leave prairie and enter belt, of scattered Burr Oak and Ash.
20.65	Road 20 lks. wide, bears. N. 78° W. and S. 78° E.
25.52.	At this point I again made careful search for the meander cor. which is described as a post with charred stake, and one bearing tree, but was unable to find any traces of either I therefore continue the line North.
25.56	Descend bank, about 7 ft. high.
27.75	Right bank of Niobrara river, bears E. and W. and set a post 4 ft. long 4 ins. square, 24 ins. in the ground for meander cor. to fractional secs. 7. and 12. marked M. C. on N. face, with T. 32. N. on S.
	R. 8. W. S. 7. on E. and.
	R. 9. S. 12. on W. faces. dug a pit 3 ft. square, 1 ft. deep, 8 lks. S. of post. and raised a mound of earth around post.
27.90	Enter river.
30.00	Leave same and enter Sand bar.
33.90	South bank of an Island in the river, bears N. 83° W. and S. 62° E. and Set a post 4 ft. long. 4 ins square, 20 ins. in the ground for meander cor. to fractional secs. 7. and 12. marked M. C. on S. face. with T. 32. N. on N.

2.

Exterior boundaries T. 32. N. R. 9. W. continued

chains	
	Range 8 W. S. 7. on E. and.
	R. 9. W. S. 12. on W. face, dug a pit 3 ft. square, 1 ft. deep, 8 lks. N. of post. and raised a mound of earth around post.
40.00	Set a post 3 ft. long 3 ins. square, 12 ins. in the ground fr. 1/4 sec. cor. marked 1/4 on W. face, dug pits 18 X 18 X 12 ins. N. and S. of post. 6 ft. dist. and raised a mound of earth around post.
44.40	Enter pond 75 lks. wide.
64.78	At this point I made careful search for the meander cor. which is described as a post with bearing trees, but was unable to find any traces of either.
	I therefore continue the line North.
66.65	North bank of same Island, bears N. 71° W. and S. 71° E. and set a post 4 ft. long 4 ins. square, 24 ins. in the ground fr. meander cor. marked M. C. on N. face, with
	T. 32. N. on S.
	R. 8. W. S. 7. on E. and
	R. 9. W. S. 12. on W. face, dug a pit 3 ft. square, 1 ft. deep, 8 lks. S. of post. and raised a mound of earth around post.
66.75	Enter river.
71.00	Leave same and enter sand bar.
77.45	Left. bank of the river bears N. 87° W. and S. 71° E. Set a sandstone 24 X 20 X 4 ins. 20 ins. in the ground fr. meander cor. to fractional secs. 7. and 12. marked M. C. on S. face, dug a pit 3 ft. square, 1 ft. deep, 8 lks. North of stone, and raised a mound of earth alongside.
80.00	At this point I made careful search fr. the sec. cor. which is described as a post in mound with charred stake, but was unable to find any traces thereof.
	I therefore re-established it as follows.
	Set a sandstone 28 X 12 X 4 ins. 22 ins. in the ground fr. cor. to secs. 1. 6. 7. and 12. marked with 1 notch on N. and 5 notches on S. edges. dug pits 18 X 18 X 12 ins. in each sec. 6 ft dist. and raised a mound of earth alongside.

3.

Exterior boundaries T. 32. N. R. 9. W. continued.

chains	
	Land level.
	Soil sandy loam 2nd and 3rd rate.
	No timber the Island is covered with dense under brush consisting of small Willow cotton-wood Box alder, Prickly Ash and vines.
	Thence I run
	North bet. secs. 1. and 6.
	Var. 11° 41' E.
	Over level bottom.
0.40	Road 20 lks. wide, bears. N. 76° W. and S. 80° E.
9.00	Leave level bottom and ascend step bench.
10.50	A point about 40 ft above stone, and ascend gently
32.00	Ascend step hill.
40.00	At this point I made careful search fr. the 1/4 sec. cor. and found it laying on the ground at the foot of the hill, but was unable to find any traces of the pits. I therefore re-established the same stone, 12 ins. in the ground fr. 1/4 sec. cor. marked 1/4 on W. face, dug pits 18 X 18 X 12 ins. N. and S. of stone, 6 ft. dist. and raised a mound of earth alongside.
51.00	Top of ridge bears E. and W. about 100 ft. above stone, and enter rolling prairie.
54.60	Road 30 lks. wide bears. N. 65° W. and S. 85° E.
59.00	Over small bed of stone, bears E. and W.
80.00	The closing cor. to Tps. 32. N. Ranges 8. and 9 W. which is a sandstone 8 X 10 X 6 ins. above ground firmly set marked.
	T. 32. C. C. on S.
	R. 8. on E. and,
	R. 9. on W. with 6 notches on S. E. and W. edges
	Land hilly and rolling.
	Soil. sandy 2nd and 3rd rate.
	No timber.

West boundary of fractional T. 32. N. R. 9. W. — copied & transferred to Exterior times.

Being unable to find the meander cor. to fractional secs. 1. and 6. I go to the sec. cor. which is a post.

Exterior boundaries T. 32. N. R. 9. W. continued.

Chains	with remains of mounds around same and pits in each sec.
	At 1 P.M. July 9th from a backsight, bet secs. 7 and 12. I find the Magnetic bearing to be, S. 11° 39' E.
	Thence I run
	North bet. secs. 1. and 6.
	Var. 11° 39' E.
15.90	Descend a bank about 5 ft. high.
16.30	At this point I again made careful search for the meander cor. to fractional secs. 1 and 6. which is described as a post and charred stake, mound and pits, but was unable to find any traces of either I therefore continued the line North.
25.75	Right bank of the Niobrara river, bears N. 89° W. and S. 72° E. and set a post. 4 ft. long, 4 ins. square, 20 ins. in the ground for meander cor. to fractional secs. 1. and 6. marked M.C. on N. face, with T. 32. N. on S.
	R. 9. W. S. 6. on E. and.
	R. 10 W. S. 1. on W. faces, dug a pit 3. ft. square, 1 ft. deep. 8 lks. S. of post and raised a mound of earth around post.
25.90	Enter river.
41.25	Leave same, and enter sandbar.
43.05	Left bank of Niobrara river, bears S. 74° W. and S. 78° E. Set a sandstone 19 x 14 x 5 ins. 15 ins. in the ground from meander cor. to fractional secs. 1 and 6 Marked M.C. on S. face, dug a pit 3 ft. square, 1 ft. deep, 8 lks. N. of stone, and raised a mound of earth alongside.
43.15	Road 20 lks. wide bears E. and W.
51.75	Slough 130 lks. wide bears E. and W.
58.60	Leave bottom and ascend steep hill.
59.68	A point about 35 ft. above slough.
79.78	Intersect the 8th standard parallel, at a point 21.08 chs. E. of the standard cor. to secs. 31. and 36. Tps. 33. N. of Rges. 9. and 10 W.
	Set a sandstone, 24. x 12 x 3 ins. 18 ins. in the ground for closing cor. to Tp. 32. N. R. 9. and 10 W. marked C.C. with 6 notches on S. E. and W. edges, dug pits, 24 x 18 x 12 ins. crossing each line

Copied and transcribed by Brock & Co.

First Guide Meridian W. between Secs. 19 + 24 T. 33 N. R. 8 W.

Resurvey of part of Exterior boundary of T. 33. N. R. 8 W.

Chains	On the West boundary of Township 33. N. Range 8. W. bet. secs. 19. and 24. from the cor. to secs. 19 24. 25. and 30.
	I run
	North West on a true line bet. secs. 19. and 24.
	Var. 11° 40' E.
	Descend.
6.60	Stream 7 lks. wide, course N. 85° E. and ascend.
20.00	Cross spur and descend.
40.00	The 1/4 sec. cor. bet. secs. 19. and 24.
54.60	Top of right bank of Ponca creek, 6 ft. high. Set a sandstone 16 x 11 x 5 ins. 12 ins. in the ground for meander cor. to fractional secs. 19 and 24 marked M. C. on N. face, dug a pit 3 ft. square, 1 ft. deep, 8 lks. S. of stone, and raised a mound of earth alongside.
54.75	Enter Ponca creek course E.
55.60	Leave same.
55.80	Top of left bank, Set a sandstone 15 x 10 x 5 ins. 11 ins. in the ground for meander cor. to fractional secs. 19. and 24. marked M.C. on S. face, dug a pit 3 ft. square, 1 ft. deep, 8 lks. N. of stone, and raised a mound of earth alongside.
60.00	Second bench about 8 ft. high.
66.25	A road 24 lks. wide, bears. W. 80° W. and E.
80.00	At this point I made careful search for the sec. cor. which is described as a sandstone, 23 x 13 x 4 ins but was unable to find any traces of it I therefore set temporary sec. cor. and continued the line North.

	North bet. secs. 13. and 18.
	Var. 11° 40' E.
8.56	Ravine course S. 40° W. about 5 ft. deep.
40.02	The 1/4 sec. cor. bet. secs. 13. and 18. which is a sandstone, 6 x 13 x 3 ins. above ground firmly set marked 1/4 on W. face, finding that I am in line and the distance, practically agreeing.
	I run from this 1/4 sec. cor.
	South bet. secs. 13. and 18. with same Var.
40.01	Re-established the sec. cor. at proportionate

First Guide Meridian W. bet. Secs. 19 & 24 T. 33 N. R. 8 & 9 W.

Return of part of Exterior boundary of T. 33. N. R. 8. W.

distance as follows.
Set a sandstone 16 X 11 X 8 ins. 11 ins. in the ground for cor. to secs. 13. 18. 19. and 24. marked with 3 notches on N. and S. edges dug pits 18 X 18 X 12 ins. in each sec. 6 ft. dist. and raised a mound of earth alongside.

Charles A. Nippel
U. S. Surveyor.

List of Names.

A list of the names of the individuals employed by Charles A. Nippel, U. S. ~~Deputy~~ Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of ~~the~~ a part of the Exterior Boundaries of Township No. 33 North, Range No. 8 West of the

Sixth Principal Meridian, in the State of Nebraska, showing the respective capacities in which they acted:

Charles Baker,	Chainman.
Fritz Robert,	Chainman.
Joseph Kubral,	Axeman.
John A. Wilson,	Flagman.

Final Oath of Assistants:

We hereby certify that we assisted Charles A. Nippel, U. S. ~~Deputy~~ Surveyor, in surveying all those parts or portions of ~~the~~ Exterior Boundaries of Township No. 33 North, Range No. 8 West of the Sixth

Principal Meridian, in the State of Nebraska, as are represented in the foregoing field notes as having been surveyed by him and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the ~~U. S. Surveyor General for~~ Commissioner of the General Land Office

Charles Baker,	Chainman.
Fritz A. Robert,	Chainman.
Joseph Kubral,	Axeman.
John A. Wilson,	Flagman.

Subscribed and sworn to before me this 22d day of November, 1890

SEAL

Isac Randal,
Notary Public.

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Final Oath of U. S. Deputy Surveyor.

I, Charles A. Nippel, U. S. ~~Deputy~~ Surveyor, do solemnly swear that, in pursuance of instructions received from the Commissioner of the ~~U. S.~~ ~~Surveyor~~ General ~~for~~ Land Office, bearing date of the thirty-first day of March, 1890, I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the ~~U. S. Surveyor General for~~ Commissioner of the General Land Office, the surveying manual, and the laws of the United States, re-surveyed all those parts or portions of the Exterior Boundaries of Township No. 33 North, Range No. 8 West of the Sixth Principal Meridian, in the State of Nebraska, as are represented in the foregoing field notes as having been surveyed by me, and under my directions; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the surveying manual, printed instructions, the special written instructions of the ~~U. S. Surveyor General for~~ Commissioner General Land Office and in the specific manner described in the field notes, and that the foregoing are the true field notes of such survey; and should any fraud be detected, I will suffer the penalty of perjury under the provisions of an Act of Congress approved August 8, 1846.

Charles A. Nippel
U. S. ~~Deputy~~ Surveyor.

Subscribed and sworn to before me this 22d day of November, 1890.

SEAL

Geo. Rawdon
Notary Public.
D.M.G.
M.M.R.

Approval.

~~Office of the U. S. Surveyor~~ Department of the Interior. General, Land Office.
Washington, D.C., February 20, 1891.

The foregoing field notes of the re-survey of the Exterior Boundaries of Township No. 33 North, Range No. 8 West of the Sixth Principal Meridian, in the State of Nebraska, executed by Charles A. Nippel, U. S. surveyor under his Contract ~~No.~~ _____, dated March 31, 1890, having been critically examined, the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

Lewis A. Groff
~~U. S. Surveyor General~~
Commissioner and Ex Officio Sur. Genl. for Nebraska.

I certify that the foregoing transcript of the field notes of the above-described surveys in the State of Nebraska, has been correctly copied from the ~~original~~ notes on file in this office.

Lewis A. Groff
~~U. S. Surveyor General~~
Commissioner and Ex Officio Sur. Genl. for Nebraska

6—151

(4—679.)

FIELD NOTES

OF THE SURVEY OF

the

Exterior Boundaries

of

Township No. 33 North, Range No. 9 West

Of the Sixth Principal Meridian,

in the State of Nebraska

AS SURVEYED BY

Charles A. Nippel, U. S. ~~Deputy~~ Surveyor,

Under his Contract ~~No.~~ _____, dated March 31st, *1890.*

Survey commenced May 20th, *1890.*

Survey completed May 23rd, *1890.*

(8780—2,000.) 6—151

Names and Duties of Assistants.

Robert A. Hindman,	Chainman.
William R. Pratt,	Chainman.
Charles Baker,	Axeman.
Joseph Kukral,	Axeman.
Fritz A. Robert,	Mound maker
John A. Wilson,	Flagman.

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Preliminary Oaths of Assistants.

We, Robert A. Hindman and William R. Pratt

do solemnly swear that we will well and faithfully execute the duties of chain carriers; that we will level the chain over even and uneven ground, and plumb the tally-pins either by sticking or dropping the same; that we will report the true distance to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance with instructions given us in the survey of the Exterior Boundaries of Township No. 33 North, Range No. 9 West of the Sixth Principal Meridian

Robert A. Hindman, Chainman.
William R. Pratt, Chainman.
, Chainman.
, Chainman.

Subscribed and sworn to before me this 10th day of May, 1890.

Seal

Vac Randa
Notary Public

We, Charles Baker and Joseph Kukral

do solemnly swear that we will well and truly perform the duties of axemen in the establishment of corners and other duties, according to instructions given us, and to the best of our skill and ability, in the survey of the Exterior Boundaries of Township No. 33 North, Range No. 9 West of the Sixth Principal Meridian

Subscribed and sworn to before me this 10th day of May, 1890.

Charles Baker, Axeman.
Joseph Kukral, Axeman.

Seal

Vac Randa
Notary Public

6—151

Exterior boundaries T. 33. N. R. 9. W.

Survy commenced May 20th 1890
With a Henry Ware Improved Theodolite.
at the standard cor. to Township 33 North
Ranges 9 and 10. West. I observed Polaris at
its Eastern Elongation, at 3. 25. A.M. and
find its Magnetic bearing to be N. 9° 56' West.

North end of needle	9° 56' East.
The Azimuth, by table	1° 44 East
The sum is the variation	11° 40' East.

I lay off the Azimuth, and mark the true
Meridian so determined by driving a picket
3.00 chs. N. of corner.

May 20th 1890.

At 6. A.M. May 21st I find the Magnetic
bearing of the line established yesterday
morning to be N. 11° 41' W. and the variation
11° 41' East.

I begin at the standard corner to tps 33 N.
Ranges 9 and 10. W. of the 6th P.M.
Which is a sandstone. 6 x 13 x 7 ins. above
ground firmly set marked S.C. with 6 notches
on N.E. and W. edges, and pit 24 x 18 x 12 ins
crosswise on each line N.E. and W. of stone
6 ft. dist. and a mound of earth alongside.
Thence I run
North bet secs. 31 and 36.
var. 11° 41' E.

Ascend steep hill.

16.00 Top of hill, about 100 ft. above stone and enter rolling prairie.

40.00. Set a sandstone 18 x 14 x 3 ins. 12 ins. in the ground for 1/4 sec. cor. marked 1/4 on W. faces dug pits 18 x 18 x 12 ins. N. and S. of stone, 6 ft. dist, and raised a mound of earth alongside.

46.50 Leave rolling prairie, and enter hilly land.

54.00 Dry run 40 lks wide, course N. 40° W.

67.50 Ravine: course N. 45° W. about 5 ft. deep, and ascend.

80.00 Set a sandstone 25 x 11 x 5 ins. 17 ins in the ground for cor. to secs. 25. 30. 31. and 36. marked with

5 notches on N. and 1 notch on S. edges dug pits 18X18X12 ins. in each section, 6 ft. dist. and raised a mound of earth alongside:

Land: rolling and hilly

Soil: Sandy loam 2nd rate.

No timber.

North bet. secs. 25 and 30.

var. 11° 41' E.

Ascend gradually.

5.50 Top of hill, about 60 ft. above stone, and descend.

18.00 Ravine course N. 48° W. about 10 ft. deep, and ascend.

36.50 Top of hill, about 80 ft. high, and descend.

40.00 Set a sandstone 22X11X3 ins. 16 ins. in the ground for 1/4 sec. Cor. marked 1/4 on W. face, dug pits 18X18X12 ins, N. and S. of stone, 6 ft. dist. and raised a mound of earth alongside.

64.00 Ravine: course N. 30° W. about 12 ft. deep, and ascend.

80.00 Set a sandstone 24X14X5 ins. 18 ins in the ground for cor. to secs. 19. 24. 25. and 30. marked with 4 notches on N. and 2 notches on S. edges dug pits 18X18X12 ins. in each sec. 6 ft. dist. and raised a mound of earth alongside.

Land: hilly

Soil: Sandy loam 2nd rate.

Timber: some scattered willows along the ravines.

North bet. secs. 19 and 24.

var. 11° 41' E.

Descend gradually.

5.00 Enter head of ravine, course N. and follow same.

22.00 Leave same, course N. 40° E. and ascend.

28.00 Top of hill, about 80 ft. high, and descend, gradually.

40.00 Set a sandstone 18X6X3 ins. 13 ins, in the ground for 1/4 sec. cor. marked 1/4 on W. face, dug pits 18X18X12 ins. N. and S. of stone, 6 ft. dist. and raised a mound of earth alongside.

58.80 Enter level bottom.

80.00 Set a sandstone 20X14X6 ins. 15 ins. in the ground for cor. to secs. 13. 18. 19. and 24. marked with 3 notches, on N. and S. edges. dug pits, 18X18X12 ins.

in each sec. 6 ft. dist and raised a mound of earth alongside.

Land: hilly and level.

Soil: hilly land sandy 3rd rate,

level bottom, sandy loam 2nd rate.

North between secs. 13 and 18.

var. 11° 41' E.

Over level land,

3.80 Top of right bank of Ponca creek, 10 ft. high. Set a sandstone 17X9X3 ins. 12 ins. in the ground for meander cor. to fractional secs. 13 and 18 marked M. C. on N. face, dug a pit 3 ft square, 1 ft. deep, 8 lks. S. of stone, and raised a mound of earth alongside,

4.00 Enter Ponca creek, course N. 62 1/2° E.

5.10 Leave same.

5.20 Top of left bank, about 8 ft. high. Set a sandstone 18X11X3 ins. 14 ins. in the ground for meander Cor. to fractional secs. 13 and 18 marked. M. C. on S. face. dug a pit 3 ft. square, 1 ft. deep, 8 lks. N. of stone, and raised a mound of earth alongside.

10.10 Leave level bottom, and ascend hill.

17.00 Top of hill, about 50 ft. high and descend.

22.00 Ravine: course S. 40° E. about 4 ft. deep and ascend.

38.80 Top of hill, about 70 ft. high and descend.

40.00 Set a sandstone 20X11X4 ins, 15 ins in the ground, for 1/4 sec. cor. marked 1/4 on W. face dug pits 18X18X12 ins. N and S. of stone, 6 ft. dist and raised a mound of earth alongside.

47.35 Ravine course S. 50° E. about 8 ft. deep, and ascend.

54.25 Top of hill, about 100 ft. high, and descend abruptly.

59.90 Ponca 15 lks, wide, bears N. W. and S. E. and ascend gradually.

80.00 Set a sandstone 20X9X4 ins. 14 ins. in the ground for cor. to secs. 7. 12. 13. and 18. marked with 2 notches on N. and 4 notches on S. edges. dug pits 18X18X12 ins in each sec. 6 ft. dist. and raised a mound of earth, alongside.

Land: hilly and level.

Soil: level: sandy loam 2nd rate.
hilly land gravelly 3rd rate.
No timber.

North bet. secs. 7. and 12.
var. 11° 41' E
Ascend gradually.

16.15 Ravine: course S. 40° E. about 12 ft. deep, with ponds, all along.

23.90 Ravine. course S. 30° W.

40.00 Set a sandstone 18 X 10 X 3 ins. 13. ins. in the ground for 1/4 sec. cor. marked 1/4 on W. face, dug pits 18 X 18 X 12 ins, N. and S. of stone, 6 ft. dist. and raised a mound of earth alongside.

59.50 Top of ridge about 100 ft. high and descend gradually.

80.00 Set a sandstone 18 X 10 X 3 ins. 12 ins in the ground for cor. to secs. 16. 7. and 12. marked with 1 notch on N. and 5 notches on S. edges. dug pits 18 X 18 X 12 ins. in each section, 6 ft. dist. and raised a mound of earth along side.

Land: gradual slopes.
Soil. Sandy loam 2nd rate.
Timber: Some scattered willows along the ravines.

North bet. secs. 1 and 6.
var. 11° 41' E
Over hilly land.

4.20 Ravine course E. about 40 ft. deep, timbered with Elm, Ash, and thick under brush.

6.20. Leave same and enter rolling prairie.

10.40 Ravine, course E. about 15 ft. deep, timbered with Elm and thick in underbrush and vines.

11.22 Leave same, and ascend.

17.00 Top of hill, about 60 ft. high, and descend.

19.20 Ravine: Course S. 56° E. about 30 ft. deep, through heavy plum thicket and vines.

23.55 Creek 8 lks. wide, course S. 56° E. and ascend.

26.55 Leave ravine: and enter hilly prairie.

38.73. A sod house 16 X 18 ft. unoccupied.

40.00 Set a sandstone 15 X 10 X 4 ins. 10 ins. in the ground for 1/4 sec. cor. marked, 1/4 on W. face,

dug pits 18 X 18 X 12 ins. N. and S. of stone, 6 ft. dist. and raised a mound of earth alongside.

67.40 Ravine: course S. 15° W. about 6 ft. deep and ascend.

80.00 Set a sandstone 26 X 8 X 7 ins. 18 ins. in the ground for cor. to tps. 33 and 34 N. Ranges 9 and 10. West. marked with 6 notches on each edge, dug pits 24 X 18 X 12 ins. lengthwise. on each line, N. S. E. and W. of stone, 6 ft. dist, and raised a mound of earth alongside.

Land: hilly and rolling.
Soil: dark sandy loam 2nd rate.
Timber White Elm Ash and Box alder, with some scattered willows in and along ravines

May 21st 1890.

At 8. A.M. May 22nd the Magnetic bearing of line between secs. 1 and 6 is S. 11° 40' E.
From the cor. to tps. 33 and 34. N. Ranges 9 and 10. W.
I run
E. on a random line between said Townships the variation of my compass being 11° 40' E.
I set temporary half Mile, and Mile, corners. at each 40 and 80 chains, and find the Township line, to be 5 miles, 78 chains, and 26 lks long. and the falling to be 90 lks. S. of the cor. to Tps. 33. and 34. N. Ranges 8 and 9. W. The correction for the true line will therefore be 15 lks N. and 1 ch. 74 lks. W. per. mile. and its course will be S. 89° 53½' W.

May 22nd 1890.

From the cor. to Tps. 33 and 34. N. Ranges 8 and 9 W. which is a sandstone, 8 X 11 X 4 ins above ground, firmly set and marked —
T. 34. N. on N.
T. 33. N. on S.
R. 8. W. on E. and.

R. 9. W. on W. with 6 notches on the N. S. E. and W. sides,
Sum
South 89° 53½ W. on a true line bet. secs. 1 and 36.
Var. 11° 40' E.
Over rolling prairie.
19.80 Top of Missouri bluffs, about 100 ft. high and bare rolling prairie, and descend.
27.10 Ravine course W. 45° W. about 3 ft. deep.
40.00 Set a sandstone 17 X 11 X 4 ins. 11 ins in the ground. for 1/4 sec. cor. marked 1/4 on N face, dug pits 18 X 18 X 12 ins E and W. of stone, 6 ft. dist. and raised a mound of earth alongside.
70.55 Ravine: course N. about 5 ft. deep.
80.00 Set a sandstone 28 X 9 X 5 ins. 21 ins in the ground for corner to secs. 1. 2. 35. and 36. marked with 1 notch on E and 5 notches on W. edges, dug pits, 18 X 18 X 12 ins in each sec. 6 ft. dist. and raised a mound of earth alongside.
Land: broken.
Soil: yellow clay and gravel 4th rate.
Timber: some scattered Box alder, Burr Oak and ash, along the ravines.

South 89° 53½ W. on a true line between secs. 2 and 35.
var. 11° 40' E.
Over broken land.
0.06 Ravine course N. about 3 ft. deep.
21.60 Over spur.
32.50 Ravine course N. 40° W. about 6 ft. deep.
40.00 Set a sandstone, 22 X 11 X 4 ins, 16 ins. in the ground for 1/4 sec. cor. marked 1/4 on N. face dug pits 18 X 18 X 12 ins. E and W. of stone, 6 ft. dist. and raised a mound of earth alongside.
48.30 Ravine: course N. 48° W. about 12 ft. deep timbered with Elm and Box alder.
61.10 Ravine: course N. about 15 ft. deep, timbered with Elm, Box alder and thick underbrush. and ascend abruptly.
66.50 Top of Missouri bluffs about 90 ft. high, and

enter rolling prairie.
76.05 A road bears N. 60° W and S. 60° E. 30 lks. wide.
80.00 Set a sandstone 20 X 11 X 4 ins. 15 ins. in the ground. for cor. to secs. 2. 3. 34. and 35. marked with 2 notches on E. and 4 notches, on W. edges. dug pits 18 X 18 X 12 ins. in each sec. 6 ft. dist, and raised a mound of earth alongside.
Land: rough and broken, the last 14.00 chs. rolling.
Soil. Sandy clay 3rd rate.
Timber: Elm. Box alder, and scrub Oak, with thick underbrush and vines.

S. 89° 53½ W. on a true line bet. secs. 3. and 34.
var. 11° 40' E.
Over rolling prairie.
11.20 Head of ravine: course S. and ascend.
15.70 Top of hill, about 40 ft. high, and descend.
23.05 Ravine: course S. about 8 ft. deep, and ascend.
25.90 Top of ridge, bears N. and S. about 50 ft. high and descend.
29.50 Ravine: course S. 40° E. about 4 ft. deep. and ascend.
40.00 Set a sandstone 17 X 11 X 4 ins. 12 ins in the ground for 1/4 sec. cor. marked 1/4 on N. face, dug pits 18 X 18 X 12 ins. E. and W. of stone, 6 ft. dist. and raised a mound of earth along side: and descend gradually.
61.00 Ravine: course S. about 3 ft. deep, and ascend.
76.00 Over spur, and descend.
77.50 Old Indian trail, bears N. and S.
79.00 Ravine: course S. 10° E about 3 ft. deep, and ascend.
80.00 Set a sandstone 21 X 16 X 3 ins. 15 ins. in the ground for cor. to secs. 3. 4. 33. and 34. marked with 3 notches on E. and W. edges. dug pits. 18 X 18 X 12 ins. in each sec. 6 ft. dist. and raised a mound of earth alongside,
Land: rolling.
Soil: Sandy loam 2nd rate,
No. timber.

S. 89° 53½ W. on a true line bet. secs. 4 and 33.
Var. 11° 40' E.

On rolling prairie.

40.00 Set a sandstone, 19 X 12 X 4 ins. 13 ins in the ground, for 1/4 sec. cor. marked 1/4 on N. face, dug pits 18 X 18 X 12 ins. E. and W. of stone, 6 ft. dist. and raised a mound of earth alongside.

44.00 Leave rolling prairie, and descend gradually.

54.65 Ravine course S. about 8 ft. deep, and ascend.

57.38. Top of hill, about 50 ft. high, and descend.

69.98. Ravine: course S. 12 ft. deep, and ascend.

80.00 Set a sandstone 24 X 15 X 4 ins. 18 ins. in the ground, for cor. to secs. 4. 5. 32. and 33. marked with 4 notches on E. and 2 notches on W. edges. dug pits 18 X 18 X 12 ins. in each sec. 6 ft. dist. and raised a mound of earth alongside.

Land: rolling with some small hills.
Soil: sandy loam 2nd rate.
No timber.

S. 89° 53½ W. on a true line bet. secs. 5 and 32.
Var. 11° 40' E.

Ascending gradually.

6.90 Ravine: course S. 50° E. about 8 ft. deep.

7.25 Enter strip of level lattesland.

22.90 Leave same, and descend.

32.50 Ravine: course S. 28° W. about 10 ft. deep.

36.95 Stream 6 lks wide, course S. 15° E. and enter narrow belt of timber. Elm, cottonwood, Ash, and Box alder, with thick underbrush and vines.

38.05 Leave same and ascend,

40.00 Set a sandstone 19 X 10 X 3 ins. 14 ins. in the ground, for 1/4 sec. cor. marked 1/4 on W. face, dug pits 18 X 18 X 12 ins. E. and W. of stone, 6 ft. dist. and raised a mound of earth alongside.

51.40 Top of ridge, about 60 ft. high, and descend.

76.65. Ravine course W. 30° E. about 5 ft. deep, and ascend steep hill.

80.00 Set a sandstone 22 X 12 X 3 ins, 16 ins in the ground for corner to secs. 5. 6. 31. and 32, marked with 5 notches on E. and 1 notch on W. Edges.

dug pits 18 X 18 X 12 ins, in each secs. 6 ft. dist. and raised a mound of earth alongside.

Land: rolling and hilly.
Soil: sandy loam 2nd rate.

Timber: Elm, Cottonwood and Box alder, Ash and heavy under brush all along the right bank of the creek.

S. 89° 53½ W. on a true line, between secs. 6 and 31.
Var. 11° 40' E.

0.65 Top of hill, about 60 ft high, and about 10 ft. above stone.

9.92. Ravine: course N. 35° E. covered with thick brush.

15.00 On spur.

18.70 Ravine: course N. 70° E. about 6 ft. deep, and ascend.

39.00 Top of hill, and enter rolling prairie.

40.00 Set a sandstone 20 X 10 X 4 ins. 15 ins, in the ground, for 1/4 sec. cor. marked 1/4 on N. face. dug pits 18 X 18 X 12 ins. E. and W of stone 6 ft. dist. and raised a mound of earth alongside.

41.40 A road 35 lks. wide, course S. 55° E. and N. 68° W.

71.10 Head of ravine: course S. 30° W.

78.26 The cor. to Tps. 33 and 34. N. Ranges. 9 and 10 W.

Land: first half mile hilly: the last rolling prairie.
Soil: Sandy loam 2nd rate.
No Timber.
May 23rd 1890.

General Description

The land on each side of the West boundary of this township is rough and hilly. on the North side of the North boundary, are the Missouri river bluffs. very rough and broken on the South side the land is hilly and rolling, producing abundant grasses of all kinds:

Charles A. Nippel U.S. Surveyor.

List of Names.

A list of the names of the individuals employed by Charles A. Nippel, U. S. ~~Deputy~~ Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of the Exterior Boundaries of Township No. 33 North, Range No. 9 West of the

Sixth Principal Meridian, in the State of Nebraska, showing the respective capacities in which they acted:

Robert A. Hindman,	Chainman
William R. Pratt,	Chainman
Charles Baker,	Axeman
Joseph Rickrad,	Axeman
Fritz A. Roberts,	Mounumaker
John A. Wilson,	Flagman

Final Oath of Assistants:

We hereby certify that we assisted Charles A. Nippel, U. S. ~~Deputy~~ Surveyor, in surveying all those parts or portions of the Exterior Boundaries of Township No. 33 North, Range No. 9 West of the Sixth

Principal Meridian, in the State of Nebraska, as are represented in the foregoing field notes as having been surveyed by him and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the ~~U. S. Surveyor General for~~ Commissioner of the General Land Office

Robert A. Hindman,	Chainman
William R. Pratt,	Chainman
Charles Baker	Axeman
Joseph Rickrad,	Axeman
Fritz A. Roberts,	Mounumaker
John A. Wilson,	Flagman

Subscribed and sworn to before me this 22 day of November, 1890.

SEAL

6—151

Sac Randa
Notary Public

Final Oath of U. S. Deputy Surveyor.

I, Charles A. Nippel, U. S. ~~Deputy~~ Surveyor, do solemnly swear that, in pursuance of instructions received from the Commissioner of the, ~~U. S. Surveyor~~ General ~~for~~ Land Office, bearing date of the thirty-first day of March, 1890, I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the ~~U. S. Surveyor General for~~ Commissioner of the General Land Office, the surveying manual, and the laws of the United States, surveyed all those parts or portions of the Exterior Boundaries of Township No. 33 North, Range No. 9 West of the Sixth Principal Meridian, in the State of Nebraska, as are represented in the foregoing field notes as having been surveyed by me, and under my directions; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the surveying manual, printed instructions, the special written instructions of the ~~U. S. Surveyor General for~~ Commissioner of the General Land Office and in the specific manner described in the field notes, and that the foregoing are the true field notes of such survey; and should any fraud be detected, I will suffer the penalty of perjury under the provisions of an Act of Congress approved August 8, 1846.

Charles A. Nippel
U. S. ~~Deputy~~ Surveyor.

Subscribed and sworn to before me this 22d day of November, 1890.

SEAL

Vac Randa
Notary Public
M.C.
M.M.R.

Approval.

~~Office of the U. S. Surveyor~~ Department of the Interior General, Land Office.

Washington, D.C., February 20, 1891.

The foregoing field notes of the survey of the exterior boundaries of Township No. 33 North, Range No. 9 West of the Sixth Principal Meridian in the State of Nebraska, executed by Charles A. Nippel, U. S. surveyor, under his Contract ~~No.~~, dated March 31, 1890, having been critically examined, the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

Lewis A. Groff,
Commissioner and Ex Officio ~~U. S.~~ Surveyor General.
for Nebraska.

I certify that the foregoing transcript of the field notes of the above-described surveys in the State of Nebraska, has been correctly copied from the ~~original~~ notes on file ~~in this~~ office.

Lewis A. Groff
Commissioner and Ex Officio ~~U. S.~~ Surveyor General.
for Nebraska.

6—151

Copy.

Exterior line bet Secs 1 and 6. T. 32. N. Ranges 9 & 10 W. by Chas. A. Nippel U.S. Surveyor.

See original notes bound with Subdivision lines of T 32. N. R 9 W. See page 68 R.H.

"West boundary of fractional Tp. 32. N. R. 9 W"

Being unable to find the meander cor to fractional Secs 1 and 6. I go to the Sec. cor, which is a post with remains of mound around same and pits in each Section
At 1. P.M. July 9th from a back sight bet Secs 7 & 12 I find the Magnetic bearing to be S 11° 39' E.; thence I run North between Secs 1 and 6.

Va. 11° 39' E.

15.90 Descend a bank about 5 ft. high
16.30 At this point I again made careful search for the meander cor. to fractional Secs 1 and 6 which is described as a post and charred stake and mound and pits but was unable to find any traces of either. I therefore continue the line North.
25.75 Right bank of the Niobrara river, bears N 89° W. and S 72° E. and set a post 4 ft long, 4 ins sq. 20 ins. in the ground for meander cor. to fractional Secs 1 & 6 marked M.C on N. face, with T 32 N. on S.; R 9 W. S 6 on E. and R. 10 W. S 1 on W faces, dug pits 3 ft. sq. 1 ft deep, 8 lks S of post and raised a mound of earth around post.
25.90 Enter river
41.25 Leave Same and enter Sand bar
43.05 Left bank of Niobrara river, bears S 74° W and S 78° E.
Set Sandstone 19 x 14 x 5 ins. 15 ins in the ground for meander cor to fractional Secs 1 and 6 marked M.C. on S. face, dug a pit 3 ft. sq. 1 ft deep, 8 lks. N. of Stone and raised a mound of earth alongside.
43.15 Road 20 lks. wide bears E & W.
51.75 Slough 130 lks wide bears E & W.
58.60 Leave bottom and ascend steep hill
59.68 A point about 35 ft. above Slough.
79.78 Intersect 8th Standard Parallel at a point 21.08 chs. E of the Standard cor. to Secs 31 & 36. T. 33 N. Ranges 9 & 10 W.
Set a Sandstone 24 x 12 x 3 ins 18 ins in the ground for closing cor to Ts. 33 N. Rs. 9 & 10 W. marked C.C with 6 notches on S, E & Wedges, dug pits 24 x 18 x 12 ins. Crosswise on each line S. E. and W of Stone 6 ft dist and raised a mound of earth alongside.
Land level and hilly, soil sandy loam 2nd & 3rd rate - No timber North of river
July 9th 1890.

(4—679.)

FIELD NOTES

OF THE SURVEY OF

the

Exterior Boundaries

of

Township No. 33 North, Range No. 10 West

Of the Sixth Principal Meridian,

in the State of Nebraska

AS SURVEYED BY

Charles A. Nippel, U. S. ~~Deputy~~ Surveyor,

Under his Contract ~~No.~~ _____, dated March 31st, *1890.*

Survey commenced June 12th, *1890.*

Survey completed June 14th, *1890.*

(8780—2,000.) 6—151

Names and Duties of Assistants.

Robert A. Hindman,	Chainman.
William R. Pratt,	Chainman.
Joseph Kukral,	Axeman.
Fritz A. Robert,	Axeman.
Charles Baker,	Mound maker.
John A. Wilson,	Flagman.

INDEX DIAGRAM.

Township No. 33 North, Range No. 10 West

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Meanders Page.....

Preliminary Oaths of Assistants.

We, Robert A. Hindman and William R. Pratt,

do solemnly swear that we will well and faithfully execute the duties of chain carriers; that we will level the chain over even and uneven ground, and plumb the tally-pins either by sticking or dropping the same; that we will report the true distance to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance with instructions given us in the survey of the Exterior Boundaries of Township No. 33 North, Range No. 10 West of the Sixth Principal Meridian in the State of Nebraska

Robert A. Hindman, Chainman.
William R. Pratt, Chainman.
, Chainman.
, Chainman.
, Chainman.

Subscribed and sworn to before me this 10th day of May, 1890.

Seal

Mac Randa
Notary Public

We, Joseph Kuskal and Fritz A. Robert,

do solemnly swear that we will well and truly perform the duties of axemen in the establishment of corners and other duties, according to instructions given us, and to the best of our skill and ability, in the survey of the Exterior Boundaries of Township No. 33 North, Range No. 10 West of the Sixth Principal Meridian in the State of Nebraska

Subscribed and sworn to before me this 10th day of May, 1890.

Seal

Mac Randa
Notary Public

Joseph Kuskal, Axeman.
Fritz A. Robert, Axeman.

6—151

Exterior boundaries T. 33. N. R. 10 W.

Chains	Survey commenced June 12th 1890. With a Henry Ware Improved Theodolite at the standard cor. to townships 33. N. R. 10 and 11 W. I observed Polaris, at its eastern Elongation. At 1. 50. A. M. and find its Magnetic bearing to be N. 9° 58' W.
	North end of needle. 9° 58' East.
	The azimuth by table. 1° 44' East.
	The sum is the var. 11° 42' East.
	I lay off the Azimuth, and mark the true meridian so determined by driving a picket 3.00. chs. North of the corner.
	At 6. A. M. I find the Magnetic bearing of the line established this morning to be, N. 11° 42' W. and the var. 11° 42' East.
	I begin at the standard cor. to Tps. 33. N. Ranges 10. and 11. West. of the 6th P. M. which is a stone, 7 x 10 x 5 ins. above ground firmly set marked S. C., with 6 notches on N. E. and W. edges, and pits. 24 x 18 x 12 ins. crosswise on each line, N. E. and W. of stone, 6 ft. dist. and a mound of earth alongside.
	Thence Run North bet. secs. 31. and 36. var. 11° 42' E.
	Over level bottom.
2.00	Leave bottom, and enter mouth of ravine. course S. 28° E.
5.00	Leave ravine, and ascend side hill,
38.50	Top of ridge, about 100 ft above stone, and descend.
40.00	Set a sandstone 19 x 11 x 8 ins. 14 ins. in the ground for 1/4 sec. cor. marked 1/4 on W. face, dug pits 18 x 18 x 12 ins. N. and S. of stone, 6 ft. dist. and raised a mound of earth alongside and ascend.
54.50	Top of hill, about 150 ft. above bottom, and road 30 lks. wide, bears E. and W. and descend.
56.00	Head of ravine, Course E. and Ascend.
74.00	Top of ridge, about 45 ft. high and descend.

Chains	
80.00	Set a sandstone, 22 x 10 x 7 ins. 16 ins in the ground fr cor. to secs. 25. 30. 31. and 36. marked with 5 notches on N. and 1 notch on S. edges. dug pits 18 x 18 x 12 ins. in each sec. 6 ft dist. and raised a mound of earth alongside.
	Land hilly.
	Soil: sandy and gravelly 3rd rate.
	No timber.

North bet. secs. 25. and 30.

Var. 11° 42' E.

Chains	
	Ascend gradually.
5.00	Top of ridge, bears N. W. and S. E. about 20 ft. above stream, and descend.
17.50	Ravine, course N. 52° W. about 3 ft. deep, and ascend.
25.00	Top of ridge, bears N. W. and S. E. about 45 ft. high and descend.
29.20	Ravine, course N. 50° W. about 4 ft. deep, and ascend.
38.00	Over spur, and descend.
40.00	Set a sandstone 19 x 13 x 4 ins. 14 ins. in the ground for 1/4 sec. cor. marked 1/4 on W. face, dug pits 18 x 18 x 12 ins. N. and S. of stone, 6 ft. dist. and raised a mound of earth alongside.
53.23	Creek 4 lks. wide course N. 47° E. and ascend.
58.50	Over spur, and descend
61.35	Ravine, course S. 38° E. about 5 ft. deep, and ascend.
73.50	Top of ridge, bears N. W. and S. E. about 80 ft. high, descend.
80.00	Set a sandstone, 24 x 12 x 5 ins. 18 ins. in the ground on N. E. slope of hill. fr cor. to secs. 19. 24. 25. and 30. marked with 4 notches on N. and 2 notches on S. edges. dug pits 18 x 18 x 12 ins. in each, sec. 6 ft dist. and raised a mound of earth alongside
	Land: hilly
	Soil: Clay and gravelly 3rd rate.
	Timber: scrub Oak, and Boxalder, on the hill, sides, along the creek.

At 8. A.M. the line bet. secs. 25. and 30 has a Magnetic bearing of S. 11° 43' E.

North bet. secs. 19. and 24.

Chains	
	Var. 11° 43' E.
	Over hilly land.
5.80	Ravine, course S. 30° E. about 3 ft. deep, and ascend.
12.00	Top of ridge, bears N. W. and S. E. about 40 ft. high and descend.
26.50	Ravine, course S. 80° E. about 10 ft. deep, and ascend.
40.00	Set a sandstone 19 x 14 x 4 ins. 14 ins. in the ground fr 1/4 sec. cor. marked 1/4 on W. face, dug pits 18 x 18 x 12 ins, N. and S. of stone, 6 ft. dist. and raised a mound of earth alongside
49.00	Top of hill, about 40 ft. above stream, and descend.
55.70	Ravine, course S. 86° E. and ascend.
59.20	Top of ridge, bears E. and W. about 60 ft high and descend.
70.70	Ravine, course E. about 7 ft. deep, and ascend.
74.60	Top of hill, about 30 ft. high, and descend.
80.00	Set a sandstone 24 x 15 x 6 ins. 18 ins. in the ground fr. cor. to secs. 13. 18. 19. and 24. marked with 3 notches on N. and S. edges, dug pits. 18 x 18 x 12 ins. in each sec. 6 ft. dist. and raised a mound of earth alongside,
	Land: hilly.
	Soil: Clay and gravelly 3rd and 4th rate.
	No timber.

North bet. secs. 13. and 18.

Var. 11° 43' E.

Chains	
	Descend.
16.50	Leave hilly land, and enter level bottom.
40.00	Set a sandstone 16 x 10 x 6 ins. 12 ins in the ground fr 1/4 sec. cor. marked 1/4 on W. face, dug pits 18 x 18 x 12 ins. N. and S. of stone, 6 ft. dist. and raised a mound of earth alongside,
43.50	Top of right bank of Ponca creek, about 8 ft. high Set a sandstone 24 x 11 x 4 ins. 19 ins. in the ground fr meander cor. to fractional secs. 13. and 18. Marked M. C. on N. face, dug a pit. 3 ft. square 1 ft. deep, 8 lks S. of stone, and raised a mound of earth alongside, from which. An Elm 8 ins. in dia. bears N. 40° E. 37 lks. dist. marked T. 33. N. R. 10. W. S. 18. M. C. B. T.

Chains	
43.80	Enter Ponca creek, course S. 70° E.
44.50	Leave same.
44.80	Top of left bank about 8 ft. high, Set a sandstone 26 X 10 X 3 ins. 20 ins. in the ground for me and cor. to fractional secs. 13. and 18. marked M.C. on S. face, dug pits 3 ft. square, 1 ft. deep, 8 lks. N. of stone, and raised a mound of earth alongside. from which, A. dead cottonwood 32 ins diam. bears S 67° E. 118 lks, dist. marked T. 33. N. R. 10. W. S. 18. M.C.B.T.
46.20	Road 20 lks, wide, bears, N. 80° W. and S. 80° E.
47.50	Leave level bottom, and ascend.
73.00	Enter rolling prairie, about 60 ft. above creek.
80.00	Set a sandstone, 24 X 12 X 3 ins. 18 ins. in the ground for cor. to secs. 7. 12. 13. and 18. marked with 2 notches on N. and 4 notches on S. edges. dug pits. 18 X 18 X 12 ins. in each sec. 6 ft dist. and raised a mound of earth alongside.

Land: level and hilly.
Soil: sandy loam 2nd rate.
Timber, Box alder, Ash, Elm, Willow and Cottonwood, with thick under brush.

At 2 P.M. the line bet. secs. 13. and 18. has a Magnetic bearing of S. 11° 41' E.
North bet. secs. 7. and 12.
Var. 11° 41' E.
Over rolling prairie.

29.50	Descend into timbered ravine,
33.30	Bottom of ravine, course S. 75° E. about 40 ft. deep timbered with Cottonwood, Elm, Ash, and heavy under brush.
38.50	Leave ravine, and enter rolling prairie.
40.00	Set a sandstone 21 X 10 X 4 ins. 16 ins. in the ground for 1/4 secs cor. marked 1/4 on W. face, dug pits 18 X 18 X 12 ins. N. and S. of stone, 6 ft. dist. and raised a mound of earth alongside.
59.00	Head of same ravine, course S. 30° W.
80.00	Set a sandstone 22 X 10 X 5 ins. 16 ins. in the ground for cor. to secs. 1. 6. 7. and 12. marked with 1 notch

Chains	
	on N. and 5 notches on S. edges. dug pits, 18 X 18 X 12 ins in each sec 6 ft. dist. and raised a mound of earth alongside.

Land: rolling.
Soil: sandy and light. 3rd rate.
Timber, cottonwood Elm, Ash, and heavy underbrush in ravines.

North bet. secs. 1. and 6.
Var. 11° 41' E.
Over rolling prairie.

40.00	Set a sandstone 21 X 11 X 4 ins. 16 ins. in the ground for 1/4 sec. cor. marked 1/4 on W. face, dug pits 18 X 18 X 12 ins. N. and S. of stone, 6 ft. dist. and raised a mound of earth alongside.
80.00	Set a sandstone 24 X 12 X 4 ins 18 ins. in the ground for Cor. to Sps. 33. and 34. N. R. 10. and 11. W. marked with 6 notches on each edge, dug pits 24 X 18 X 12 ins. lengthwise on each line. N. S. E. and W. of stone, 6 ft. dist. and raised a mound of earth alongside.

Land: rolling
Soil: sandy loam 2nd and 3rd rate.
No timber.

June 12th 1890.

At 7. 30. A. M. June 13th the Magnetic bearing of line bet. secs. 1. and 6. is S. 11° 42' E.
From the cor. to Sps. 33 and 34. N. R. 10. and 11 West.
I run
East on a random line bet. said townships. the var. of my compass being 11° 42' E.
I set temporary half mile. and mile corners at each 40 and 80 chs. and find the township line to be 5 miles, 79 chs. and 74 lks, long and the falling to be, 12 lks. S. of the cor. to Sps. 33. and 34. N. Ranges 9 and 10 W. the correction for the true line will therefore be 2 lks, N. and 26 lks, W. per mile, and its course will be S 89° 59' W. from the cor. to Sps. 33 and 34. N.

Chains	
	Ranges 9 and 10 W. which is a sandstone. 7X8X7 ins. above ground firmly set. marked with 6 notches on each edge, with pits 24X18X12 ins. on each line N. S. E. and W. of stone, 6 ft. dist. with a mound of earth alongside.
	Jump
	S 89° 59' W. on a true line bet. secs. 1. and 36.
	Var. 11° 42' E.
	Over rolling prairie.
27.50	Pond 30 lks wide.
40.00	Set a sandstone 18X9X5 ins. 13 ins. in the ground for 1/4 sec. cor. marked 1/4 on N face, dug pits 18X18X12 ins. E. and W. of stone, 6 ft. dist. and raised a mound of earth alongside.
58.50	Enter ravine, course S. 52° E. about 2 ft. deep.
60.50	Leave same.
80.00	Set a sandstone, 24X8X6 ins. 18 ins. in the ground for cor. to secs. 1. 2. 35. and 36. marked with 1 notch on E. and 5 notches on W. edges. dug pits 18X18X12 ins. in each sec. 6 ft. dist. and raised a mound of earth alongside.
	Land: rolling.
	Soil: sandy loam 2nd rate.
	No timber.
	June 13th 1890.

At 8. A. M. June 14th the Magnetic bearing of the last line run is N. 78° 19' E. and the var. is. 11° 41' E.

Chains	
	S 89° 59' W. on a true line bet. secs. 2. and 35.
	Var. 11° 41' E.
	Over rolling prairie.
13.00	Enter draw course W. and follow same.
15.70	Leave same course S. 13° W.
25.30	Ravine course S. 10° W. about 4 ft. deep.
40.00	Set a sandstone 19X8X5 ins. 14 ins. in the ground for 1/4 sec. cor. marked 1/4 on N. face, dug pits 18X18X12 ins. E. and W. of stone, 6 ft. dist. and raised a mound of earth alongside.
47.00	Leave rolling prairie, and descend.
55.50	Ravine course N. 50° W. about 4 ft. deep, and ascend.
64.00	Top of hill, about 60 ft. high, and descend.

Chains	
69.80	Ravine, course N. about 3 ft. deep, and ascend.
74.00	Enter rolling prairie.
80.00	Set a sandstone 26X12X5 ins. 20 ins. in the ground for cor. to secs. 2. 3. 34. and 35. marked with 2 notches on E. and 4 notches on W. edges. dug pits 18X18X12 ins. in each sec. 6 ft. dist. and raised a mound of earth alongside.
	Land: rolling and hilly.
	Soil: rolling land sandy loam, 2nd rate.
	Hilly land light and sandy 3rd rate.
	No timber.

	S 89° 59' W. on a true line bet. secs. 3. and 34.
	Var. 11° 41' E.
	Over high rolling prairie.
40.00	Set a sandstone 21X12X5 ins. 15 ins. in the ground for 1/4 sec. cor. marked 1/4 on N. face, dug pits 18X18X12 ins. E. and W. of stone, 6 ft. dist. and raised a mound of earth alongside. and descend.
60.70	Enter plowed field bears N. and S.
62.10	Leave same and enter prairie.
63.20	Leave same and enter brush and timber.
65.40	Top of creek bank about 8 ft. high.
65.60	Creek 4 lks. wide course S and ascend.
67.25	Leave timber and brush and ascend abrupt hill.
69.35	Top of hill, about 80 ft. high and descend.
76.80	Head of ravine, course S. 40° E. and ascend gently.
80.00	Set a sandstone 24X12X5 ins. 18 ins. in the ground on E. slope of hill, for cor. to secs. 3. 4. 33. and 34. marked with 3 notches on E. and W. edges, dug pits 18X18X12 ins. in each sec. 6 ft. dist. and raised a mound of earth alongside.
	Land: rolling and hilly.
	Soil: rolling prairie sandy loam 2nd rate
	Hilly land yellow clay 3rd rate.
	Timber: Elm, Ash, Box alder, Willows. with heavy under brush and vines along the creek banks.

Chains	
	S. 89° 59' W. on a true line bet. secs. 4. and 33.
	Var. 11° 41' E.
	Over hilly land.
6.40	Top of hill, about 60 ft. above stone. and des. and gently.
22.40	Ravine, course S. about 3 ft. deep.
36.10	Foot of hill, and ascend abruptly.
38.30	Top of hill, about 75 ft. high, and descend abruptly.
40.00	Set a sandstone 20 X 11 X 4 ins. 15 ins. in the ground about 40 ft. above creek, for 1/4 Sec. Cor. marked 1/4 on N. face, dug pits 18 X 18 X 12 ins. E. and W. of stone 6 ft. dist. and raised a mound of earth alongside.
43.30	Left bank of bend in creek, and follow same,
57.40	Top of left bank of creek, about 6 ft. high.
57.60	Pond in creek, 26 lks. wide, course, S. 80° E.
57.90	Top of right bank enter timber, Burr, Oak and Elm.
58.20	Spring drain 8 lks. wide, course N. 33° E. about 5 ft. deep, and ascend steep, bank, spring bears S. 33° W. about 10 chs. dist.
60.10	Top of bank, about 50 ft. high, and ascend gradually.
80.00	Set a sandstone 26 X 12 X 5 ins. 20 ins. in the ground on E. slope of hill, for cor. to secs. 4. 5. 32. and 33. marked with 4 notches on E. and 2 notches on W. edges, dug pits, 18 X 18 X 12 ins. in each sec. 6 ft. dist. and raised a mound of earth alongside.
	Land: hilly.
	Soil: sandy clay 3rd rate.
	Timber, Burr, Oak, Elm, Willow, with thick under brush, and vines.

	S. 89° 59' W. on a true line bet. secs. 5 and 32.
	Var. 11° 41' E.
	Over hilly land.
2.00	Top of ridge bears N. and S. about 15 ft. above stone, and descend.
9.00	Ravine, course N. 24° W. about 3 ft. deep, and ascend.
12.30	Top of ridge, bears N. and S. about 40 ft. high and descend.
18.20	Head of ravine, course N. and ascend.

Chains	
26.70	Over spur, and descend.
33.65	Ravine course N. 45° E. about 6 ft. deep, and ascend.
38.45	Enter rolling prairie.
40.00	Set a sandstone 20 X 10 X 5 ins. 15 ins. in the ground for 1/4 sec. cor. marked 1/4 on N. face, dug pits 18 X 18 X 12 ins. E. and W. of stone, 6 ft. dist. and raised a mound of earth alongside and descend gently.
62.50	Ravine, course S. 38° E. about 8 ft. deep, and ascend gently.
80.00	Set a sandstone 24 X 12 X 4 ins. 18 ins. in the ground for cor. to secs. 5. 6. 31. and 32. marked with 5 notches on E. and 1 notch on W. edges. dug pits 18 X 18 X 12 ins. in each sec. 6 ft. dist. and raised a mound of earth alongside.
	Land: hilly and rolling
	Soil: hilly land sandy clay 3rd rate.
	rolling prairie, sandy loam 2nd rate.
	No timber.

	S. 89° 59' W. on a true line bet. secs. 6. and 31.
	Var. 11° 41' E.
	Over rolling prairie.
17.55	Road 25 lks. wide, bears N. 35° W. and S. 35° E.
40.00	Set a sandstone, 21 X 11 X 4 ins. 15 ins. in the ground for 1/4 Sec. cor. marked 1/4 on N. face, dug pits, 18 X 18 X 12 ins. E. and W. of stone, 6 ft. dist. and raised a mound of earth alongside.
75.35	Ravine course N. 52° W. about 6 ft. deep.
79.74	The cor. to Tps. 33. and 34. N. R. 10. and 11 W.
	Land, rolling.
	Soil: sandy loam 2nd rate.
	No timber.
	June 14th 1890.

General Description.

The land laying on each side of the West boundary of this township, and South of Ponca Creek, is hilly and very rough.

10

Exterior boundaries, T. 33 N. R. 10 W. ~~embraced~~.

The remainder is hilly and rolling, some small groves of timber, will be found in the main ravines or valleys tributary to Ponca Creek.

Charles A. Nypoel
U. S. Surveyor.

List of Names.

A list of the names of the individuals employed by Charles A. Nippel, U. S. ~~Deputy~~ Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of the Exterior Boundaries of Township No. 33 North, Range No. 10 West of the Sixth Principal Meridian, in the State of Nebraska, showing the respective capacities in which they acted:

Robert A. Hindman,	Chainman,
William R. Pratt,	Chainman,
Joseph Kukral,	Axeman,
Fritz A. Robert,	Axeman,
Charles Baker,	Mound maker,
John A. Wilson,	Flagman.

Final Oath of Assistants:

We hereby certify that we assisted Charles A. Nippel, U. S. ~~Deputy~~ Surveyor, in surveying all those parts or portions of the Exterior Boundaries of Township No. 33 North, Range No. 10 West of the Sixth Principal Meridian, in the State of Nebraska, as are represented in the foregoing field notes as having been surveyed by him and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the ~~U. S. Surveyor General for~~ Commissioner of the General Land Office

Robert A. Hindman,	Chainman
William R. Pratt,	Chainman.
Joseph Kukral,	Axeman.
Fritz A. Robert,	Axeman.
Charles Baker,	Mound maker.
John A. Wilson,	Flagman

Subscribed and sworn to before me this 22d day of November, 1890.

SEAL

Vac Randa
Notary Public

6—151

Final Oath of U. S. Deputy Surveyor.

I, Charles A. Nippel, U. S. ~~Deputy~~ Surveyor, do solemnly swear that, in pursuance of instructions received from the Commissioner of the, ~~U. S. Surveyor~~ General ~~for~~ Land Office, bearing date of the thirty-first day of March, 1890, I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the ~~U. S. Surveyor General for~~ Commissioner of the General Land Office, the surveying manual, and the laws of the United States, surveyed all those parts or portions of the Exterior Boundaries of Township No. 33 North, Range No. 10 West of the Sixth Principal Meridian, in the State of Nebraska, as are represented in the foregoing field notes as having been surveyed by me, and under my directions; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the surveying manual, printed instructions, the special written instructions of the ~~U. S. Surveyor General for~~ Commissioner of the General Land Office and in the specific manner described in the field notes, and that the foregoing are the true field notes of such survey; and should any fraud be detected, I will suffer the penalty of perjury under the provisions of an Act of Congress approved August 8, 1846.

Charles A. Nippel
U. S. ~~Deputy~~ Surveyor.

Subscribed and sworn to before me this 22d day of November, 1890.

SEAL

Vac Randa
Notary Public
M.C.
M.M.R.

Approval.

~~Office of the U. S. Surveyor~~ Department of the Interior General, Land Office.
Washington, D.C., February 20, 1891.

The foregoing field notes of the survey of the exterior boundaries of Township No. 33 North, Range No. 10 West of the Sixth Principal Meridian in the State of Nebraska executed by Charles A. Nippel, U. S. surveyor, under his Contract ~~No.~~, dated March 31, 1890, having been critically examined, the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

Lewis A. Groff,
Commissioner and Ex Officio ~~U. S.~~ Surveyor General, for Nebraska.

I certify that the foregoing transcript of the field notes of the above-described surveys in the State of Nebraska, has been correctly copied from the original notes on file in this office.

Leon A. Groff
Commissioner and Ex Officio ~~U. S.~~ Surveyor General. for Nebraska.

6—151

Retracing and Re-establishment (Copy)

Line betn Secs 1 and 6 Town. 32 N., Ranges 10 and 11 W.

by Charles A. Nippel U.S. Deputy Surveyor.

See original field notes bound with Subdivision lines of T. 32 N. R. 10 W.

W. boundary of fractional T. 32. N. R. 10 W.

chains

Being unable to find the ¼ Sec. cor to fract'l Secs 1 and 6 T. 32 N. Rs 10 and 11 W. I go to the cor. to Secs 1. 6. 7 & 12. which I found to be the remains of post stake, mound and pits.
At 10 A.M. July 15th from a backsight betn Secs 7 & 12. I find the Magnetic bearing to be S 11° 39' E. Thence I run North betn Secs 1 and 6.

Var. 11° 39' E.

34.50 Top of Niobrara river bluffs, enter young timber and brush and descend abruptly about 200 ft.
37.00 Foot of bluff and enter level bottom covered with old cedar stumps
39.80 The right bank of Niobrara river, bears E & W.
Set a post 4 ft. long, 4 ins square, 24 ins in the ground for Meander cor. to fract'l Secs 1 & 6 marked M. C. on N. face, T 32 N. on S.; R 10 W. S. 6 on E and S 1 on W. faces, dug a pit 3 ft. square, 1 ft deep, 8 lks S. of post, and raised a mound around post.
39.90 Enter river
48.65 Leave same
48.75 The left bank of Niobrara river bears N. 62½° E. & S 75° W.
Set a Sandstone 19 x 14 x 4 ins. 14 ins in the ground for Meander Cor. to fractional Secs 1 & 6 marked M. C. on S face, dug a pit 3 ft sq., 1 ft deep, 8 lks N. of Stone and raised a mound of earth alongside
55.90 Pond 90 lks wide bears E and W.
79.88 Intersect the 8th Stand'd Parallel at a point 21.97 chs. E of cor to Secs 31 & 36 T. 33. N. Rs 10 & 11 W. Set a Sandstone 24 x 10 x 5 ins 18 ins in the ground for closing Cor. T 32 N, Rs. 10 & 11 W. marked CC with 6 notches on S E & W. edges, dug pits 24 x 18 x 12 ins crosswise on each line S E & W. of Stone 6 ft. dist. and raised a mound of earth alongside.
Land level Soil Sandy loam, 2nd rate, No timber North of river

Received with letter from Robert Harvey U.S. Surveyor dated Feby 12. 1891

(4—679.)

54197

FIELD NOTES

OF THE SURVEY OF

Eighth Standard Parallel North from the Standard Corner to Townships 33 North range [redacted] 11 West to the West bank of the Niobrara river West

Of the 6th Principal Meridian,

in Nebraska

AS SURVEYED BY

Robert Harvey, U. S. ~~Deputy~~ Surveyor,

Under his Contract No. ....., *dated* May 26th, 1890.

Survey commenced July 23rd, 1890.

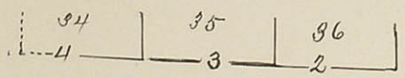
Survey completed July 24th, 1890.

(8780—2,000.) 6—151

Names and Duties of Assistants.

Benjamin H. Davidson, Chainman
Charles H. Paul Chainman
Henry A. Burrell. Axeman
Sumner C. Lyle, Axeman
Jonathan L. Reden, Flagman

Index



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Meanders Page.....

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Preliminary Oaths of Assistants.

We, Benjamin H Davidson & Charles H. Paul

do solemnly swear that we will well and faithfully execute the duties of chain carriers; that we will level the chain over even and uneven ground, and plumb the tally-pins either by sticking or dropping the same; that we will report the true distance to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance with instructions given us in the survey of the Eight Standard Parallel North, from the Standard Corner to Townships 33 North Ranges 10 and 11 West — West to the West bank of Niobrara River — West of the 6th Principal Meridian in Nebraska

Benjamin H. Davidson, Chainman.
Charles H Paul, Chainman.
, Chainman.
, Chainman.

Subscribed and sworn to before me this 8th day of July, 1890.

John T Prouty
Notary Public

We, Henry A Burrell Johnathan L Peden and Elias J. Hershiser

do solemnly swear that we will well and truly perform the duties of axemen in the establishment of corners and other duties, according to instructions given us, and to the best of our skill and ability, in the survey of the Eight Standard Parallel North — from the Standard Corner to Townships 33 North Ranges 10 and 11 West — West to the West bank of Niobrara River — West of the 6th Principal Meridian in Nebraska

Subscribed and sworn to before me this 8th day of July, 1890

Henry A. Burrell, Axeman.
Jonathan L Peden, Axeman.
Elias J Hershiser

John T Prouty
Notary Public

6—151

Subscribed and sworn to before me this 17th day of July 1890
Robert Harvey
A S Surveyor

Sumner C Lyle Axeman

1

Eighth Standard Parallel in Range 11 W

Survey commenced July 23d 1890 with a Burts improved Solar Compass made by Wm J Young Philad Penn. and numbered 4432. Examined and tested and approved by the Surveyor General of S.D. July 4th 1890.

At the Standard corner to Township 33 N Ranges 10 and 11 West of the 6th Principal Meridian in Latitude 42° 47' N. Long 98° 33' West. at 9h 22m PM by my watch which is 2 minutes fast of local mean time

I take an Observation on Polaris in accordance with the manual of instructions and find the magnetic bearing of the Star to be N. 10° 33' W

I drive a picket 3 chains north of the corner on the line thus found

Astronomical time by watch July 23	9h 22m
Watch fast	02
Correct local mean time of Obs. July 23	9 20
Tabular time U.C. of Polaris 1890 July 15 (Tab I	17 41.5
Reduction for 7 days	27.4
Local M.T. of U.C. of Polaris July 22 1890	17 14.1
Which taken from the time of Obs. leaves the Hour angle	16 05.9
Subtract from	23 56.
Argument for Tab II	7 50.1
Azimuth of Polaris for Lat. 43°	1° 30' E
North End of Needle	10° 33' E
The Sum is the Va	12° 03' E

Which is also the mean variation

I lay off the Azimuth 1° 30' to the West and drive a picket for future reference

July 23 1890

At 7 A M July 24. at the Corner above described, which is a Sand Stone, 7×10×5 ins above ground, firmly set, marked S.C. with 6 notches on N. E. and W. edges and pits 24×18×12 ins N. E. and W. of Stone 6 ft dist. with a raised mound of earth 1 ft high. Herds of Cattle have nearly destroyed the mound and filled the pits. I clean out the pits and pile up the scattered earth which makes a mound 1½ ft high 4 ft base on N side of Stone. I adjust my compass to a true meridian by the solar apparatus which corresponds to the

Eighth Standard Parallel in Range 11 W

meridian established last night
The Magnetic bearing of the line is now N 12° 09' W
which corrected for mean declination by table
page 55 of printed manual of Instructions gives
Va 12° 03' E
Thence I run
West on a true line on S boundary of Sec 36
Va 12° 09' E
Over level river bottom
22.60 Mouth of Gulch Co S. Leave bottom and ascend to second
bench 15 ft high bears N 85° E and S 88° W.
33.60 Gulch Course S 10 ft deep
40.00 Set a Sand Stone 12+12+4 ins - 8 ins in the ground
for 1/4 Standard Sec. Cor. Marked 1/4 S.C. on N. face, dug
pits 18+18+12 ins E and W of Stone 5 ft dist and raised
a mound of earth 1 ft high 3 1/2 ft base alongside
42.60 Ravine Course S
45.00 Descend along slope of bare clay and shaly bluffs
48.00 Foot of Bluffs and enter Valley, bears S 80° E and N 80° W
bluff 30 ft high - Over level bottom
80.00 Set a Slate Stone (right angled shape) 18+8 ins each of
the 2 shorter sides + 2 1/2 ins thick, 14 ins in the ground
for Standard Cor to Secs 35 and 36 - marked
1 Notch on the E
5 Notches on the W faces
S.S.C. on S Edge, dug pits 18+18+12 ins N. E. and W. of
Stone 5 ft dist and raised a mound of earth
2 ft high 4 1/2 ft base alongside

Land - Valley level, 2nd bench rolling
Soil in valley clay and sand mixed 2d rate
2nd bench clay soil
No timber

West on a true line on S boundary of Sec 35
Va 12° 09' E
Over level bottom
25.50 Intersect the left bank of Niobrara River

Eighth Standard Parallel in Range 11 West

Chains Bears N 78° W. S 77° E
Set a Sand Stone 16+8+4 ins 11 ins in the ground for Meander Cor to Fractional Sec 35. Marked M.C. on W face, dug a pit 36 ins square 1 ft deep, 8 links E of stone and raised a mound of earth 1 ft high 4 ft base alongside.
The channel of the river has moved to the S. side of the River bed, leaving N. side nearly dry. I therefore continue the chaining on the line
40.00 A point on low bar 6 ins above the water. The 1/4 Sec Cor. cannot be established. I therefore measure north from this point to the permanent bank 3 ft high 160 links
Where I
Set a Sand Stone 15+8+4 ins 10 ins in the ground for a Witness Corner to the 1/4 Standard Sec. Cor. Marked W.C. on S. face. dug pits E and W. of stone 5 1/2 ft dist 1 ft deep and raised a mound of earth 2 ft high 4 1/2 ft base alongside
I continue chaining on line from point for 1/4 Sec. Cor. on bar
48.00 Leave River and Intersect low River bank 3 ft high at short bend
Set a Sand Stone 15+8+4 1/2 ins 10 ins in the ground for Meander Cor. to Fractional Sec 35. Marked M.C. on E face, dug a pit 36 ins square, 1 ft deep 8 links West of stone and raised a mound of earth 2 ft. high, 4 1/2 ft base alongside
Enter White willow brush
55.40 Intersect left bank of Niobrara River.
Set a Sand Stone 16+8+4 ins 11 ins in the ground for Meander Corner to Fractional Sec 35. Marked M.C. on W face. dug a pit 36 ins square 1 ft deep. 8 links E of stone and raised a mound of earth 2 ft high 4 1/2 ft base alongside
Thence along on Sand in river
67.50 Leave River and Intersect left bank. Set a Sand Stone 15+8+4 ins 10 ins in the ground for meander Corner, to Fractional Sec 35, Marked M.C. on E. face; dug a pit 36 ins square 1 ft deep 8 links W. of Stone, and raised a mound of earth 2 ft high

Eighth Standard Parallel in Range 11 W. Continued

Chains 4½ ft base alongside
Corr level Valley
80.00 Set a Sand Stone 20×12×5 ins 14 ins in the ground for Standard Corner to Secs 34 and 35 marked
2 Notches on E
4 Notches on W.
S.S.C. on S. faces dug pits 18×18×12 ins. N. E and W. of Stone 5½ ft dist and raised a mound of earth 2 ft high, 4½ ft base alongside
Land level Valley
Soil mixed clay and Sand 2° rate
No timber – 7.40 chs of Willow brush

At 9. a m diurnal change has diminished Va 2'
West on a true line on S boundary of Sec 34
Va 12° 07' E.
20.00 Enter Scattering Cottonwood timber
35.00 Enter Scattering brush
40.00 Set a Sand Stone 14×9×4 ins, 9 ins in the ground for ¼ Standard Corner to Sec. 34, marked ¼ S.C. on N. face, dug pits 18×18×12 ins E and W of Stone 5½ ft dist and raised a mound of earth 1½ ft high 3½ ft base alongside
from which
A Cottonwood Stump 16 ins diam. bears North 2 links dist. which I do not mark
No trees in limits
Through thick willow brush
44.15 A pond 75 links wide bears N W and S. E.
47.10 Intersect the left bank of the Niobrara River which is 4 ft high, abrupt and sandy
Set an Ash post 4 ft long 4 ins square with Charred Stake for Meander Corner to fractional Sec. 34 marked M.C. on W face dug a pit 36 ins square 1 ft deep, 8 links east of post and raised a mound of earth 2 ft high 4½ ft base around post, from which
A Willow (white) 5 ins diam bears No 86½° E 10 links dist. marked B.T. M.C.
An Ash 5 ins diam. bears N 40½° W 17 links

Eighth Standard Parallel in Range 11 W. Continued

dist marked B.T. M.C.
To ascertain the length of line and falling
I set my flag on the right bank of the river and Chain across the stream which at this place is from 2 to 3 ft deep in the deepest places and at 75.50 chs intersect right bank at flag, thence
Through brush and timber, 5.50 chs, making a total of 80.00 chs. from the last Sec. Cor. After diligent search I fail to find any tracer or sign of Standard Cor to Secs 33 and 34, as described in notes of original Survey furnished by the General Office.
I now go to the Standard Corner to Secs 32 and 33 on the S. boundary of Tp 33 N R 11 W. I find the pits N. E and W. plain and mound well preserved, on the upper end of post I plainly distinguish the following description S 32 on N W.
S 33 on N E
S S C. on S face the marks below are obliterated by the weather and decay
Thence I run
East on S boundary of Sec 33. T 33. R. 11 W
Va 12° 20' E
39.89 chs ¼ Sec. Cor. at cor of wire fence. E pit discernable
Mound nearly destroyed lower end of post in mound
61.90 Leave rolling upland for low bottom and brush and timber, bears N W and S E.
64.20. Enter Swamp bears N W and S E.
73.30 chs Leave Swamp bears N W and S E
79.99 chs I find lower end of post broken off 2 ins below the surface, a pit N. quite plain
Pits E and W. dim. Mound wholly destroyed
The part of post found is 4 ins in diam shows the marks of the Ax, and appearance of having been Charred by fire. I now set my instrument over the point so found and take the bearings of trees in the vicinity that have the appearance of being the original bearing trees. to wit;
A Cottonwood Stump bears N 34° E 94 links dist
No marks to be seen on stump
A Cottonwood Stump bears N 71° W. 110 links dist

Eighth Standard Parallel in Range 11 W.

No marks to be seen on Stump
The bearings and distance do not agree
with the notes of the original bearings and
measurements. I continue the line East from
the point at the end of 79.99 chs as a temporary
Cor. to Secs 33 and 34
East on S boundary of Sec 34
Va 12° 20' E
7.30 chs a pond 60 links wide bears N 10° W. S. 10° E
13.55 A mound of Earth 1½ ft high and a pit 4 ft disk
On this mound I find the upper end of a post
4 ins Square and about 2 ft long marked
S 33 on 1 side
S 34 on 2d side
S — on 3d side (other marks lower down cannot
be distinguished on account of being destroyed
by weather and decay)
I now return to the temporary Corner to Secs
33 and 34 with the fragment of the post just
found and upon placing broken ends of
the pieces above described together, they
exactly fit into each other. I thus conclude
that the point for temporary Corner to Secs 33
and 34 is the true and lawful Cor to Secs 33
and 34 of the original Survey
I now proceed to reestablish the Standard Corner
to Secs 33 and 34 as follows
In place of the original post I set a Sand Stone
22 x 12 x 4 ins, 15 ins in the ground for Standard
Cor. to Secs 33 and 34 Marked
3 Notches on E
3 Notches on W.
S.S.C. on S faces; dug pits 18 x 18 x 12
ins N. E. and W. of Stone 5 ft disk and
raised a mound of earth 2 ft high 4 ft
base alongside (I set the lower end of
old post at foot of Stone on N. side and
set the upper part in ground on S side
of Stone for future reference or exam
ination)
From which

Eighth Standard Parallel in Range 11 West

W Cottonwood tree 18 ins diam bears N. 88½° W 54 links
dist marked B.T. S 33.
A Cottonwood Stump bears N 34° E. 94 links dist
which I do not mark
A Cottonwood Stump ~~in diam~~ bears N 79½ W
110 links dist. which I do not mark
Bottom is low and subject to frequent inundations
Timber is Willow, Ash, Cottonwood,
Undergrowth — Willow, dogwood and buffaloberry

From the Standard Corner to Secs. 33 and 34
I find.
East along the S boundary of Sec. 34
Va 12° 20' E
7.30 A pond 60 links wide 2 ft deep bears S 10° E
and N 10° W.
13.55 Intersect the right bank of Niobrara River
At this point I find an old corner resembling
a Meander Corner having a mound and
pit on West side. I retrace and perpetuate
this Corner as follows.
Set a Willow post 4 ft long 4 ins Square with
Charred Stake 12 ins in the ground for meander
Corner to fractional Secs 34 marked M.C.
on E face. dug pit 36 ins sq. 1 ft deep 8 ks south
of post and raised a mound of Earth 2 ft
high 4 ft around post. from which
A Cottonwood 18 in diam bears N 69° W. 40
links dist marked B.T. M.C.
13.70 Niobrara River leave bank for sandbar
26.70 River runs S E.
Leave low sand bar and enter running water
42.20 Intersect the left bank of Niobrara River
43.58 A point 2.74 links, North of Meander Corner
to fractional Sec 34 on the 8th Standard
Parallel.
The length of the South boundary of sec 34
is as follows

Distance East of River	47.10 chs
Distance across River on offset	30.03 "
Distance West of River	13.55 "
Total	90.68 ch
Subtract	80.00 "
Excess	10.68 "

Eighth Standard Parallel in Range 11 W Continued

Fearing that there may be some error in the measurements I remeasure the South boundary of Secs 34. without any material difference. The South boundary of Sec 34 is therefore too long by 10 68 chs

I immediately telegraph the result of the closing to the Commissioner of the General Land Office at Washington D.C. asking for instructions as to manner of allowing for error in Subdivision and running Exteriors and await answer.*

Land River Valley

Soil Sandyloam 2d and 3d rate

Timber Second growth Cottonwood. Scattering brush Willows boxelder and buffalo berry

July 24 1890

*. For answer to telegram See Note 8 July 27 page 156

Eighth Standard Parallel in Range 11 West

General Description

This line runs up the Niobrara River Valley, excepting about 22 chs on second bench. The land is level, Valley is narrow, the line strips ascent to second bench being close to the line. The soil in Valley is mixed sandy and clay, with a sand subsoil or base. Second bench is clay. Excepting 7 40 chs; in Sec 35. there is no timber or brush along river bank. The timber in Sec. 34 is mostly second growth Cottonwood, the original timber having been all cut away. The brush at West end of the line is mostly Willow, buffalo berry, boxelder and ash. The Township North is rough and broken.

List of Names.

A list of the names of the individuals employed by Robert Harvey, U. S. ~~Deputy~~ Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of the Eight Standard Parallel North, from the Standard Corner to Townships 33 and 34 North Ranges 10 and 11 West — West to the West Bank of Niobrara River — West of the 6th Principal Meridian, in Nebraska, showing the respective capacities in which they acted:

Benjamin H Landon	Chainman
Charles H Paul	Chainman
Henry A Burrell	Axeman
Sumner C Lyle	Axeman
Jonathan L Peden	Flagman

Final Oath of Assistants:

We hereby certify that we assisted Robert Harvey, U. S. ~~Deputy~~ Surveyor, in surveying all those parts or portions of the Eight Standard Parallel North, — from the Standard Corner to Townships 33 N. Ranges 10 and 11 West — West to the West Bank of Niobrara River — West of the 6th Principal Meridian, in Nebraska, as are represented in the foregoing field notes as having been surveyed by him and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the ~~U. S. Surveyor General for~~ Commissioner of the General Land Office

Benjamin H Landon	Chainman
Charles H Paul	Chainman
Henry A Burrell	Axeman
Sumner C Lyle	Axeman
Jonathan L Peden	Flagman

Subscribed and sworn to before me this 26th day of October, 1890

SEAL

A H Dunn
Notary Public

6—151

Final Oath of U. S. Deputy Surveyor.

I, Robert Harry, U. S. ~~Deputy~~ Surveyor, do solemnly swear that, in pursuance of instructions received from the Commissioner of the, U. S. ~~Surveyor General for~~ General Land Office, bearing date of the 26th day of May, 1890, I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the ~~U. S. Surveyor General for~~ Commissioner of the General Land Office, the surveying manual, and the laws of the United States, surveyed all those parts or portions of Eighth Standard Parallel North - from the Standard Corner to Townships 33 North Ranges 10 and 11 West to the West bank of Niobrara River - West of the 6th Principal Meridian, in the Nebraska, as are represented in the foregoing field notes as having been surveyed by me, and under my directions; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the surveying manual, printed instructions, the special written instructions of the ~~U. S. Surveyor General for~~ Commissioner of the General Land Office and in the specific manner described in the field notes, and that the foregoing are the true field notes of such survey; and should any fraud be detected, I will suffer the penalty of perjury under the provisions of an Act of Congress approved August 8, 1846.

Robert Harry
~~U. S. Deputy~~ Surveyor.

Subscribed and sworn to before me this 12 day of February, 1891

C. E. Forbes
Clerk Dist Court

Seal

Approval.

Office of the ~~U. S. Surveyor General~~ Commissioner, Genl Land Office
Washington, D.C. June 30, 1891.

The foregoing field notes of the survey of those portions of the 8th Standard Parallel North from the Standard corner to T. 33 N. Rs. 10 & 11 W. to the W. bank of Niobrara river, west of the 6th Principal Meridian, Nebraska.

executed by U. S. Surveyors Nicholas J. Paul and Robert Harry under his Contract No. ~~~, dated May 25, 1890, having been critically examined, the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

Commissioner Genl Land Office Signed T. H. Carter
Ex officio Surveyor General ~~U. S. Surveyor General.~~

I certify that the foregoing transcript of the field notes of the above-described surveys in the State of Nebraska has been correctly copied from the original notes on file in this office.

T H Carter
6—151 Commissioner Genl Land Office ~~U. S. Surveyor General.~~
Ex Officio Surveyor General.

Received with letter from Robert Harvey U.S. Surveyor, dated July 12. 1891 -

(4—679.)

FIELD NOTES

OF THE SURVEY OF

The fractional West boundaries of Tps. 34 North Rs. 9 and 10 West. North and fractional West boundaries of Tp. 33 N. R. 11 West. West and fractional North boundary T. 34 N. R. 11 West. North and fractional West boundaries of Tps 33 Ranges 12 and 13 West. North and West boundaries of Tps. 34 N Ranges 12 and 13 West. Fractional North boundary of Tp. 33 North Range 14 West. North and fractional West boundaries of Tps 34 North Ranges 14 15, 16 and 17 West and fractional North boundary of Tp. 34 N of Range 18 West

Of the 6th Principal Meridian,

Nebraska

AS SURVEYED BY

Robert Harvey, U. S. ~~Deputy~~ Surveyor,

Under his Contract No. ——, *dated* May 26th, 1890.

Survey commenced July 9, 1890.

Survey completed October 17th, 1890.

(8780—2,000.) 6—151

Names and Duties of Assistants.

Benjamin H Davidson	Chainman
Charles H. Paul	Chainman
Henry A Burrell	Axeman
Johnathan L Peden	Flagman
Elias J Hershiser	Axeman
Sumner A Lyle	Axeman

INDEX DIAGRAM.

Township.....*, Range*.....

6	5	4	3	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

Meanders Page.....

Preliminary Oaths of Assistants.

We, Benjamin H Davidson & Charles H Paul

do solemnly swear that we will well and faithfully execute the duties of chain carriers; that we will level the chain over even and uneven ground, and plumb the tally-pins either by sticking or dropping the same; that we will report the true distance to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance with instructions given us in the survey of the fractional West boundaries of Tps. 34 N. Rs 9 and 10 W. — North and fractional West boundary T. 34 N. R 11 W. — West and fractional North boundary T. 34 N R 11 W. — North and fractional N. boundaries Tps 33 N. Rs 12 and 13 W. — North and West boundaries Ts 34 N. Rs 12 and 13 W. — fractional North boundary T 33 N R 14 W. — North and fractional West boundaries Ts 34 N. Rs 14, 15, 16 and 17 West and fractional N. boundary T 34 N. R 18 W. of the 6th Principal Meridian in Nebraska

Benjamin H. Davidson, Chainman.

Charles H Paul, Chainman.

, Chainman.

, Chainman.

Subscribed and sworn to before me this 8th day of July, 1890.

John T Prouty
Notary Public

We, Henry A Burwell, Johnathan L Peden & Elias J Henshiser

do solemnly swear that we will well and truly perform the duties of axemen in the establishment of corners and other duties, according to instructions given us, and to the best of our skill and ability, in the survey of the fractional West boundaries Ts 34 N. Rs 9 and 10 W. — North and fractional West boundary T 33 N, R 11 W. — West and fractional North boundary T 34 N R 11 W. — North and fractional West boundaries Ts. 33 N Rs 12 and 13 W. — North and West boundaries Ts 34 N. Rs 12 and 13 W. — fractional N. boundary T 33 N R 14 W, North and fractional West boundaries of Tps 34 N. Rs. 14, 15, 16 and 17 West — and fractional N. boundary of Tp 34 N R 18 West of 6th Principal Meridian in Nebraska

Subscribed and sworn to before me this 8th day of July, 1890.

Henry A Burwell, Axeman.
Jonathan L Peden, Axeman.
Elias J Henshiser, Axeman.

John T Prouty
Notary Public

6—151

Subscribed and sworn to upon me this 17 day of July 1890 Robert Henry US Surveyor

Sumner C Lyle

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W boundary T34 R9

36	25	24	13
2	2	3	4
31	30	19	18

W boundary T34 R10 and Rein line

36	25
6	7
31	30

8

N boundary T33 R11

31	32	33	34	35	36
14	13	13	12	12	11
6	5	4	3	2	1

W boundary T33 R11

6	7	18	19	30
15	16	16	17	18
1	12	13	24	25

W boundary T34 R11

36	25	24	13	12	1
21	22	23	24	24	25
31	30	19	18	7	6

N boundary T34 R11 and Reservation line

31
27
6

28

N boundary T33 R12

31	32	33	34	35	36
34	33	33	32	32	31
6	5	4	3	2	1

W boundary T33 R12

6	7	18
35	35	36
1	12	13

W boundary T34 R12

36	25	24	13	12	1
39	40	40	41	42	43
31	30	19	18	7	6

N boundary T34 R12

31	32	33	34	35	36
47	46	46	45	44	44
6	5	4	3	2	1

N Boundary T33 R13

31	32	33	34	35	36
53	52	51	51	50	50
6	5	4	3	2	1

W boundary T33 R13

6	7
55	56
1	12

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W boundary T34

36	25	24	13	12	1
59	59	60	60	61	61
31	30	19	18	7	6

W boundary T34 R13

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66	66	65	64	64	63
6	5	4	3	2	1

N boundary T34 R13

3

35	36
70	69
2	1

N Boundary T33 R14

31	32	33	34	35	36
76	75	75	74	73	73
6	5	4	3	2	1

N boundary T34 R14

6	7	18	19
77	78	78	79
1	12	13	24

W boundary T34 R14

31	32	33	34	35	36
85	84	83	83	82	82
6	5	4	3	2	1

N boundary T34 R15

6	7	18	19
86	87	87	88
1	12	13	24

W boundary T34 R15

31	32	33	34	35	36
94	94	93	93	92	91
6	5	4	3	2	1

N boundary T34 R16

6	7	18	19
96	96	97	97
1	12	13	24

W boundary T34 R16

31	32	33	34	35	36
106	105	104	103	102	102
6	5	4	3	2	1

N boundary T34 R17

6	7
106	108
1	12

W boundary T34 R17

31	32	33	34	35	36
114	113	113	112	111	110
6	5	4	3	2	1

N Boundary T34 R18

Exterior Boundaries of 34 N. R 9 W

Chains Survey Commenced July 9th 1890 with Burts improved Solar Compass having the north end of needle 2 7/16 inches long. needle box attached to vernier reading to 3 minutes revolving divided circle or main horizontal plate for measuring angles reading by two opposite verniers reading to single minutes — open sights with finely cut apertures — Manufactured by Wm. Young of Phila. Penn. and numbered 4432 which was as per instructions of the Hon. Commissioner of the General Land Office, submitted for examination to the Surveyor General of the District of Dakota, and was by him duly tested and approved, July 4 1890 at his Office at Huron S.D. At the corner to Sps 33 & 34 N Rs 9 & 10 West Latitude 45° 58' N Long. 98° 23' I observe Polaris at 9h P.M. by my watch which was set to mean time as shown by my Solar Apparatus at 4 o'clock this afternoon. I find the magnetic bearing of the Star to be 10° 36' East

Astronomical time by watch July 9th	9h 00m
Tabular time U. C. of Polaris July 1st	18h 36m.4
reduction for 7 days Sub.	27.4
Local mean time U C of Polaris July 8	18h.09
which taken from time of observation leaves	
hour angle of Polaris to be	14 51
Subtract from	23 56
Argument for table II	9 05
Azimuth of Polaris for Lat 45°	1° 11' East
North end of needle	10° 36' East
The sum is the variation at this time	11° 47' East

I lay off the azimuth to the West and drive a picket 2.00 chains north of the corner on the true meridian thus determined

The mean Variation is 11° 47' East

July 9 1890

Chains At 7 a.m. July 10th I find the magnetic bearing of the line established last night to be N 11° 52' E allowing 6' for diurnal change

Chains (as per table on pg 55 of Manual) the mean declination is N 11° 47' East.
I begin at the corner to Tps 33 and 34 N Rs 9 and 10 West, which is a stone 8×8×7 above ground and marked 6 notches on N and S edges and 6 notches on E and W faces ~~&c.~~ with a + on top of stone.
with pits 24×18×12 in N. S. E and W of stone 6 feet dist. and mound of Earth 2½ feet high 4½ft base along side on the West. from which corner stone I saw thence North
North bet. Secs 31 and 36
Va 11° 52' E
over gently ascending surface
18.25 Drain Course W
40.00 Set a hard sand stone 16×10×4 ins, 11 ins in the ground for ¼ Sec. Cor. marked ¼ on W face and dug pits 18×18×12 ins. N and S of stone 5½ feet dist. and raised a mound of earth 1½ft high. 3½ft base alongside
53.40 Drain course E
77.40 Drain 10ft deep Course S.E.
80.00 Set a hard sand stone 18×12×5 ins. 12 ins in the ground for Cor. to Secs 25. 30. 31 and 36 marked with 1 notch on the S and 5 notches on the N Edges; dug pits 18×18×12 ins in each Sec 5½ feet dist. and raised a mound of Earth 2ft high 4½ feet base alongside
Land - gently rolling S^t has gentle S slope. Clay soil and is good farm land. N^r is broken by two ravines. which head a short distance W of the line soil clay loam good 2nd rate

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North bet. Secs. 25 and 30
Va 11° 52' E
over undulating ground.
4.40 Ravine 15ft. deep Course E.
18.00 Ravine Course S.E.
38.00 North edge of table land. bears N W and S E and descend 15ft
40.00 Set a hard sand stone 16×7×5 ins 11 ins in the ground for ¼ Sec. Cor. marked ¼ on W face

Chains dug pits 18×18×12 ins. N and S of stone 5½ft dist and raised a mound of earth 1½ft high. 3½ft base alongside
Surface descending
48.60 Deep brushy ravine course N.E.
65.70 Deep brushy ravine course N.W. 15ft deep and
Ascend along West slope of hill
78.00 Top of ridge bears N.W. and S.E. and descend about 10ft
Begin 80.00 On E. slope of hill. Set ash post 4ft long 4 ins square with piece of Charred wood. 12 ins in ground for corner to Secs. 19. 24. 25 and 30. Marked 2 notches on S and 4 notches on N edges
S 19 R 9 W. on N E
S 24 R 10 W on N W
T 34 N. S 30 N on S.E.
S 25 on S W faces. dug pits 18×18×12 ins in each Sec 5½ft distant and raised a mound of earth 2ft high 4½ft. base. alongside from which
Ins Elm tree 6 ins diam. bears N 14° 25' E. 38 lks dist. and marked B.T. S 19 2½ft from ground
South 38 chs table land. clay soil. good farm land.
North 42 chs rough and broken. good for grazing only
Timber - Some ash and Red elm in the ravines also thick brush and vines

---

North between Secs 19 and 24
Va 11° 52' E.
Descend over rough broken ground
30.00 Dry Creek Course N.W.
38.90 Ravine Course W 10ft deep ascend
40.00 Set Ash post 4ft long. 3 ins square, with charred stake 12 ins in ground for ¼ Sec Cor. marked ¼ S on W face dug pits 18×18×12 ins N and S of post 5½ft distant and raised a mound of earth 1½ft high 3½ft. base, around post
64.85 Sharp edge of Bluff, and descend abrupt bank through brush and small timber.
65.50 Foot of bluff and enter Missouri River Valley 50ft below bears S. 70° E
80.00 Set soft sand stone 24×10×5 ins. 16 ins in the ground for corner to Secs 13. 18. 19 and 24 marked with 3 notches on S and 3 notches on N Edges, dug pits

Chains 18X18X12ins in each Sec. 5½ft dist. and raised a mound of Earth 1½ft high, 4½ft base alongside

The bluffs along the S 66 chains are rough and broken and good only for grazing. There is some timber such as Willow, box elder, cottonwood and ash along the dry creek and in the ravines. The valley is level clay soil first rate

---

At 8.40 M Local attraction has increased Va 11' North between Secs. 13 and 18.

Va 12° 03' E

Enter brush at corner.

5.80 Right bank of Channel of Missouri River, set soft sand stone 16X10X5ins, 11ins in ground, marked M.C. on N face for Meander Corner to fractional Secs 13 and 18 dug pit 3ft Square 10 links South of Corner, and raised a mound of earth 2ft high 4½ft base along side. River Bank is 6ft high above present water level. Sandy and lined with brush and vines Water in Channel Being only about 3ft deep. 8 chains across and at

8.60 A small narrow island covered with small Willows.

12.00 North side of island

15.00 North bank of channel - bank low about 2ft high Set Cottonwood post 4ft long 3ins square with charred stake 12ins in the ground for meander Cor. to fractional Secs. 13 and 18, marked M.C. on S. T 34 N. R 9 W. S 18 on E. R 10 W. Sec. 13 on W faces. dug a pit 36ins square, 1ft deep 8 links North of post and raised a mound of Earth 2ft high 4½ft base around post

Over low island covered with small Willow brush

40.00 Set Cottonwood post 4ft long 4ins square with charred stake 12ins in the ground for ¼ Sec. Cor marked ¼ S on W face, dug pits 18X18X12ins N and S of post and raised a mound of earth 1½ft high 3½ft base around post

64.75 Intersect Right bank of main channel of the

Chains Missouri River 6ft above present water level Sandy and abrupt, lined with red Willow brush Set a Cottonwood post 4ft long 4ins square with charred stake, 12ins, in the ground for meander corner to fractional Secs. 13 and 18 marked M.C. on N. T 34 N. R 9 W. S 18 on E. R 10 W. S 13. on W. faces, dug a pit 36ins square 1ft deep 8 lks S. of post and raised a mound of earth 2ft high, 4½ft base around post.

Land S. of River, level Island undulating caused by River channels. Island is from 2 to 6ft high above present Water level. Soil is Sandy and 3rd rate. North 15 chs is of older formation and is covered with scattering Cottonwood trees red Willow and buffalo berry brush. S part of the Island is of recent formation grown up with young White Willow brush and devoid of other vegetation

July 10 1890

General Description

The surface of this Township is varied, being high gently rolling table land, Rough broken North slope, and River bottom. Soil of table land is dark clay loam 1st and 2nd rate.

North slope of Bluffs. Yellow clay, good only for grazing. River bottom south of channel dark clay and first rate. Island - Sandy soil 3rd rate.

Timber - Box elder Willow, Cottonwood and Ash in the Canyons. Willow box elder and ash brush along the river bank. - Small White Willow on S. part. N. part scattering Cottonwood trees and thick red Willow along N side of Island.

64.60 chains through brush and scattering timber

The Axman Elias J Hershiser was taken sick July 16th and 17th and Summer O Lyle was engaged in his place

Chains Survey commenced July 11th 1890 with Burts improved Solar Compass made by Wm J Young of Phila. No. numbered 4437. in perfect adjustment
On account of last night being cloudy and rainy I was unable to observe Polaris. Therefore at 9 o'clock this morning I set my compass over the center of the Corner to Townships 33 and 34 N Ranges 10 and 11 W, which is a sand stone 6x12x4 ins. above ground, marked with 6 Notches on N and S edges and 6 Notches on E and W. faces with pits 24x18x12 ins lengthwise on each line N S. E and W. 6 ft dist. and raised mound of earth 2 ft high 4½ ft base along side, and adjust the same to a true meridian by the Sun apparatus. The magnetic bearing of the line so determined is N 12° 0' W. at this time. This corrected by table on page 55 of printed manual gives for mean Variation N. 11° 59' E
Thence I run
North bet Secs 31 and 36
Va 12° 03' E
over rolling ground — descend
4.00 Ravine course N.W. 10 ft deep, thence over point of low dividing ridge
7.00 Ravine course S.W.
14.00 Same ravine course S E,
16.75 Same ravine course S W — ascend
20.00 Enter smooth undulating prairie
40.00 Set hard sand stone, 16x10x4 ins — 11 ins in the ground for ¼ Sec Cor. — marked — ¼ on W face dug pits 18x18x12 ins N and S of stone 5½ ft dist and raised a mound of earth 1½ ft high 3½ ft base, along side
47.50 Shallow ravine 5 ft deep course S W.
50.10 Ravine course S W 5 ft deep
80.00 Set a hard sand stone 18x10x4 ins, 12 ins in the ground for Cor. to Secs 25, 30, 31 and 36 — marked 1 Notch on S. and 5 notches on N edges, dug pits 18x18x12 ins, in each Sec. 5½ ft dist. and raised a mound of earth 2 ft high 4½ ft base along side
Land — S 20 chs. broken, clay soil 2nd rate

Chains N. 60 chs undulating prairie clay soil 1st rate no timber

Note — From this point I search to the Northward for the S.W. line of the Ft. Randall Military Reservation from the S.E. corner of the Reservation, which is an Iron post 4 ft x 4 x 4 ins above ground, I run on a blank line N 66° 35' W. an angle corresponding to the bearing on which this line was originally run in 1860. according to the notes furnished by the General Land Office. And at 2 miles search for the mound of earth with parallel trenches described in said notes without success.
I therefore abandon the range line until after I have established the West boundary of Township 34 of Range 11 W. and make search for the N W Corner

At 2 P.M. aug 5th 1890 diurnal change has reduced the Va 5'.
North between secs 25 and 30
Va 11° 58' E
over smooth and gently rolling prairie
22.74 Intersect the S.W. boundary of Ft Randall Military Reservation
Set a hard sand stone 16 x 13 x 2½ ins 8 ins in the ground for closing cor. to Frac. Secs. 25 and 30 marked C.C. on S. edge. S. 30 on E and S 25 on W. faces. RES. on N edge, dug 3 pits. One pit N. 51° 35' W. one S 51° 35' E and one S.W. at right angle to Reservation line 5½ ft distant from stone, raised a mound of earth 2 ft high. 4 ft base. Along side
Land gently rolling N. descent
Soil — dark clay loam 1st rate
No Timber

From the Closing Corner to Frac. Sec. 25 and 30 just established on Reservation line I run

Exterior Boundaries T 34 N. R 10 W

Chains thence
S 51° 35' E. on S.W boundary Ft Randall Military Reservation in S.31
Vw. 11° 58' E
Over gently rolling ascending ground
92.44 Intersect S.E. Cor. of said Reservation which is an Iron post 4 ft long 6 x 6 ins above ground marked —— "U S. military Res'n."
Land gently rolling soil dark clay loam 1st rate
Aug 5th 1890

July 11 1890 1 P.M.
To retrace the S.E boundary of Ft Randall military Reservation. I go about 2½ mi to a hill northeasterly from the S.E. Cor. of the said Reservation and place my instrument on line with the Iron corner above mentioned and a stone flag, and the round sharp summit of "Tower Butte" said line has a bearing of S.33° 04' W and N.33° 04 E.
From the Iron Cor. I chain along said line and at
236.93 chs find a red Cedar post 6 ft long 5 x 5 ins with letters RES dimly cut on NW side.
I dig into the ground around post and find small pieces of charred wood. I am of the opinion that this is an original post
At 258.95 chs Ravine course N.W.
268.93 chs Ravine course NW
324.95 chs Gulch course E
329.23 chs Drain 150 ch wide course N.W.
378.12 chs Summit of "Tower Butte" which is a bald cone shaped peak about 25 ft high above the ridge, and is composed of blue shale capped with yellow clay
I find on the summit a hole and alongside a red cedar post 5 ft long 4 x 4 ins, which I set in the hole and place 4 large stones firmly around its base, and cut on the NW side RES.
At 431.56 chs a small flag mound of cobble

Exterior Boundaries T 34 N R 10 W.

stones. descend about 20 ft to
436.23 chs intersect Iron post 4 ft long 6 x 6 ins in mound of stone, on right bank of Missouri River, near base of S. slope of low bluff. Post is marked "U.S. Military Res'n."
July 11 1890

General Description
The land of this Tp is rolling table land, broken N slope of Missouri River Bluffs and narrow River Valley. The table land is rolling, dark clay soil 1st and 2nd rate. N slope of hills yellow clay 3d rate good for grazing River valley dark clay soil 1st rate
Grass, — On the upland fine Buffalo grass and young bluejoint. In the ravines and low places coarse grass 3 to 5 ft high
Timber — Some Black and Choke cherry bushes Boxelder and Ash are found in some of the ravines. On N slope of Buttes and E of the Reservation line I observed considerable sand stone lying on the hill sides

Exterior Boundaries T 33 N. R. 11 W.

Chains Survey commenced July 26th 1890 with Burts improved Solar Compass, made by Wm J. Young of Phdl. No. numbered 4432. at the corner to Tps 33 and 34 N Ranges 10 and 11 W. Lat. 42° - 52' N Long. 98.31' W. I observed Polaris at 8h 53m PM (by my watch) which is 3 minutes fast of mean local time. In accordance with instructions contained in the printed manual page 72 I find the magnetic bearing of the Star to be N 10° 32 3/4'

Local astronomical mean time of observation

by my watch 1890 July 26 is	8h	53m
Watch fast		3m
Correct mean local time of obs July 26	8h	50m
Tabular L.M.T. of Polaris. Aug 1st	16h	35m
Reduction for 6 days add		27.4m
which taken from time of Obs. Leaves	17h	02.4
hour angle	15	47.6
Subtract from	23	56.1
Argument per Table II	8.	08.5
Azmuth of Polaris for Lat.	1°	27' E
North end of Needle	10°	32' E
The sum is the variation	11°	59' E

This is also the mean declination by table in printed Manual page 56

I lay off the azmuth 1° 27' to the west and mark the point for future reference

July 26 1890

Note:- July 27th This morning I received a telegram from the Commissioner of the General Land Office dated July 25th in answer to my telegram of the 24 instructing me to follow the instructions already furnished with contract as to method of running the Township Exteriors and Subdividing the Townships, and make no allowance for error. In accordance with these instructions. I will run the line between Townships 33 and 34 R 11 W due West 6 miles. less the proper Convergency making no allowance for Excess of 10.68 chs found on 8th Stand Parallel on

Exterior Boundaries T 33 N. R 11 W.

Chains the South boundary of Sec. 34. July 24 1890.

At 6 a.m. July 27 I take the magnetic bearing of the point on the true meridian. which I find to be on the line with my flag North of the ravine bet. Secs. 31 and 36 established on my line of July 11th.

The bearing of the line is N 12° 03' W and the variation N 12° 03' E. which corrected by table on page 55 gives N 11° 59' for mean declination at the corner above discribed, which is a Sand Stone 6 x 10 x 4 ins above ground and firmly set, marked with 6 notches on N and S edges and 6 notches on E and W faces. with pits 24 x 18 x 12 ins. lengthwise on each line N. S. E and W. 6 ft. distant. with raised mound of Earth 2½ ft high 5 ft based. alongside.

Thence I run

West on a true line bet. Secs. 1 and 36

Va 12° 03' E.

1.50	Top of low hill 6 ft higher than corner, descend
7.50	Ravine course S.W. 20 ft deep
22.05	Creek, water in holes. course S.W.
32.05	Creek, water runs S.W. 4 lks wide ascend
40.00	Enter rolling Prairie set a Sand Stone 18 x 8 x 5 ins 12 ins deep for 1/4 Sec. Cor. Marked 1/4 on N. face. dug pits 18 x 18 x 12 ins. E and W of Stone 5½ ft distant, and raised a mound of earth 1½ ft high. 3½ ft base, alongside
77.50	Ravine. course S. 15 ft deep
80.00	Set a Sand Stone 20 x 10 x 4 ins 15 ins in the ground for corner to Secs. 1, 2, 35 and 36. Marked 1 notch on the E. 5 notches on W. 6 notches on S edges dug pits 18 x 18 x 12 ins in each Sec. 5½ ft. disk and raised a mound of earth 2 ft high. 4 ft base alongside- On steep hillside 3/0 to the top

Land rolling: Soil E 35 chs broken by ravines and Creeks 2nd rate. W. 50 chs 1st rate all clay soil no timber

Exterior Boundaries T 33. N. R 11. W.

Chains West on a true line bet. Secs 2 and 35
Va 12° 03′ E.

1.00 Enter smooth gently rolling prairie
15.60 Drain course S.E.
40.00 Set a sand stone 12×10×5 ins 8 ins in the ground for 1/4 Sec Cor. Marked 1/4 on N face dug pits 18×18×12 ins E and W of Stone 5 1/2 ft dist. and raised a mound of earth 1 1/2 ft high 3 1/2 ft base along side
46.10 Wagon road bears N and S.
80.00 Set a sand stone 18×10×4 ins. 12 ins. in the ground for Cor. to Secs. 2, 3, 34 and 35. Marked 2 notches on E. 4 notches on W. 6 notches on S. edges dug pits 18×18×12 ins. in each Sec. 5 1/2 ft dist. and raised a mound of earth 2 ft high 4 1/2 ft base along side
Land rolling
Soil Clay 1st rate.
No timber

At 8.30 A M Va. has increased 2′ by diurnal change
West on a true line bet. Secs. 3 and 34
Va 12° 05′ E.
Over rolling ground - descend
3.00 Drain course S 5 ft deep
7.80 Drain course S.E. 3 ft deep
40.00 Set a sand stone 14×10×4 ins 9 ins. in the ground for 1/4 Sec Cor. Marked 1/4 on N face, dug pits. 18×18×12 ins E and W of Stone 5 1/2 ft dist. and raised a mound of earth 1 1/2 ft high 3 1/2 ft base along side
40.50 A Short Gulch course S.
42.90 Short deep Gulch course S W. forms about 3 chs North of line
60.00 Slough or Dry Creek course S - ascend
68.10 Shallow drain 5 ft deep course S.E.
73.50 Same drain course N.E. 3 ft deep
80.00 Set a sand stone 16×12×4 ins 11 ins in ground for Cor. to Secs. 3, 4, 33 and 34 marked 3 notches on E and W. edges and

Exterior Boundaries T 33 N R 11 W.

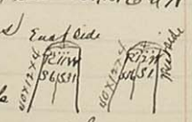
Chains 6 notches on S. face
dug pits 18×18×12 ins in each Sec. and raised a mound of earth 2 ft high. 4 1/2 ft base alongside
Land - rolling
Clay soil 2nd rate
No timber

West on a line bet. Secs. 4 and 33.
Va 12° 05′ E.
Over rolling ground
40.00 Set sand stone 16×6×5 ins 11 ins in the ground for 1/4 Sec Cor. Marked 1/4 on N face. dug pits 18×18×12 ins E and W of Stone 5 1/2 ft dist. and raised a mound of earth 1 1/2 ft high 3 1/2 ft base alongside
descend
46.90 Ravine 40 ft deep course S ascend
55.00 Top of hill and descend
62.10 Ravine course S.E. ascend to level table
80.00 Set a hard flinty sand stone 3 cornered thus 18 ins on each of 3 sides × 3 1/2 ins thick 12 ins in the ground for corner to Secs 4, 5 32 and 33, marked 4 notches on E 2 notches on W and 6 notches on S faces. dug pits 18×18×12 ins in each Sec. 5 1/2 ft. dist. and raised a mound of earth 2 ft high 4 1/2 ft. base alongside
Land - rolling prairie
Soil - clay E. 60 chs 2nd rate. W 20 chs 1st rate
No timber

At 10 A.M. Diurnal change has decreased Va 3′ Local attraction has increased Va 5′
West on a true line bet. Secs. 5 and 32
Va 12° 07′ E.
Over level table land
10.00 descend
22.45 Ravine course N.W. - ascend
40.00 Set a sand stone. 12×8×6 ins. 8 ins in the ground for 1/4 Sec Cor Marked 1/4 on N. face dug pits 18×18×12 ins E and W. of Stone 5 1/2 ft. dist.

Chains and raised a mound of earth 1½ft high 3½ft base alongside
Over rolling ground — descending
45.65 A dry creek — water in holes. course S.W.
ascending rolling ground
56.45 Ravine 20ft deep Course S.E.
70.00 Descend
80.00 On East side of a ravine about 8ft lower than top of slope
Set a sand stone 18×12×5 ins, 12 ins in the ground for corner to Secs 5, 6, 31 and 32 marked
5 Notches on E
1 Notch on W
6 notches on S face. dug pits 18×18×12 ins in each Sec. 5½ft dist. and raised a mound of earth 2ft high 4½ft base alongside
Land — rolling and broken
Soil Clay 2nd rate
No timber

West on a true line bet. Secs 6 and 31
Va 12° 07′ E.
Descend
1.00 Centre of Ravine 4ft lower than corner Course S.E.
3.00 Top of table-rider gently rolling prairie-descending
40.00 Set a sand stone 18×18×4 ins, 12 ins in the ground for ¼ Sec. Cor. marked ¼ on N face dug pits 18×18×12 ins E and W. of stone 5½ft dist. and raised a mound of earth 1½ft high. 3½ft base alongside
Over level ground
78.90 Wagon road bears N.E. and S.W.
79.33 Set a sand stone 40×12×4 ins. 26 ines in the ground for Cor. to Tps. 33 and 34 N Ranges 11 and 12 W. marked 6 notches cut on each of the 4 sides N.S. E and W
T 33 N on S. T. 34 N. on N. edges
R 11 W. on top of E face. S. 31 and S 6. on N and S of E face, R 12 W on top S. 36. and 1. on N and S sides of E face; with a + on top and on N side of this the figures 1890. dug pits 24×18×16 ins. lengthwise on each line N.S. E and W. of stone 6ft dist. and raised



Chains a mound of earth 2½ft high 5ft base alongside
Land — E^r gently rolling
W^r level
Soil — Clay 1st and 2nd rate
No Timber
Note. — Convergency by table IX Pg. 98 of manual is 67 lks

At 12 M July 27 I set my compass over the cor. stone to Townships 33 and 34 N Rgs. 11 and 12 W and make an observation on the sun for Latitude which I find agrees with the calculated latitude of this point N 42° 52+." At 2 PM I adjust my instrument by the solar apparatus to a true meridian, the line so determined has a magnetic bearing at this hour S 12° 00′ E or N 12° 00′ W and the Va. is N 12° 00′ E which corrected by table on page 56 gives for mean declination 12° 06′ E
Thence I run as per Special Instructions due South bet. Secs. 1 and 6.
Va 12° 00′ E.
Over undulating prairie.
1.50 Wagon road bears N 16¾° E
20.00 Descend South of table land
26.30 Drain course S.W. 5ft deep
40.00 Set a sand stone 14×10×6 ins. 9 ins in the ground for ¼ Sec. Cor. marked ¼ on N face. dug pits 18×18×12 ins N and S of stone 5½ft dist. and raised a mound of earth 1½ft high 3½ft base alongside
54.00 Leave hills and enter Ponca Creek valley. bears N.W and S.E. bluffs 50ft high.
Over descending valley
61.50 Ponca Creek. channel between main banks 60 lks wide — banks 6ft high — water in channel 15 lks wide 6 ins deep runs S.E. — thence over level valley
79.00 Leave 1st bottom and ascend steep bank 5ft high to level Second bottom bears N 70° W. S 10 E.
80.00 Set a sand stone 24×14×3 ins 18 ins in the ground for corner to Secs. 1, 6, 7 and 12. marked 5 notches on the S.

Exterior Boundaries T. 33 N. R 11 W.

Chains One notch on the N. Edges and 6 notches on the E. faces dug pits 18×18×12 ins. in each Sec. 5½ft dish and raised a mound of earth 2ft high 4½ft base alongside

Land N 20 chains undulating

Soil - 1st rate farm land

Slope of hill is sandy and gravelly 3rd rate

Valley land is clay alluvial loam 1st rate

Timber. Along the creek Willow box elder ash cottonwood and oak, with underbrush along creek bank

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South bet. Secs. 7 and 12

Va. 12° 00' E.

Over level valley

27.00 Drain 8ft deep course N. E.

35.00 Leave valley and enter foothills bears N W and S. E. Gentle ascent

40.00 Set a sand stone 18×12×2½ ins. 12 ins in the ground for ¼ Sec Cor. Marked ¼ on N face dug pits 18×18×12 ins N and S. of stone 5½ft dist. and raised a mound of earth 1½ft high 3½ft. base alongside

67.50 Same ravine course N. W. ascend along N. E. slope of bluff 100 ft. high

80.00 Set a sand stone 24×12×3 ins 18 ins in the ground for cor. to Secs. 13. 18. 7 and 12. Marked
4 notches on S
2 notches on N edges
6 notches on E face. dug pits 18×18×12 ins in each Sec. 5½ft. dist. and raised a mound of earth 2ft. high. 4½ft base alongside

Land - Valley level - hills rolling N slope

Soil - Valley 1st rate hills 2nd rate

Note:- Cor. stands on N. E. slope about 10ft lower than top of hill.

At 3 P.M. Va has increased by diurnal change 1'

South bet. Secs. 13 and 18

Exterior Boundaries T 33 N. R 11 W.

Chains Va 12° 01' E

Ascending

3.00 Top of bluffs bears N. W and S. E. thence over undulating prairie

40.00 Set a sand stone 16×12×4 ins. 11 ins in the ground for ¼ Sec Cor. Marked ¼ on W face. dug pits 18×18×12 ins N and S 5½ft. dish. and raised a mound of earth 1½ft high 3½ft. base alongside

80.00 Set a sand stone 16×12×4 ins. 11 ins in the ground for cor. to Secs. 13. 18. 19 and 24 marked
3 notches on S and
3 notches on N edges
6 notches on E. face. dug pits 18×18×12 ins in each Sec. 5½ft. dist. and raised a mound of earth 2ft. high 4½ft base alongside

Land - undulating tableland

Soil - Clay 1st rate farm land

No timber

South bet. Secs. 19 and 24.

Va. 12° 01' E.

Over gently rolling ascending ground

40.00 Set a sand stone 18×12×4 ins. 12 ins in the ground for ¼ Sec Cor. Marked ¼ on W face. dug pits 18×18×12 ins N and S. of stone 5½ft. dist and raised a mound of earth 1½ft high 5½ft. base. alongside

41.11 Divide - Wagon road bears E. & W. on old Indian trail

48.50 Leave table land and descend south slope of bluffs to Niobrara River. bears E. and W.

57.50 Drain course S. E.

68.60 Drain course S. E.

80.00 Set a sand stone 18×14×4 ins. 12 ins in the ground for Cor. to Secs. 19. 24. 25 and 30 marked
2 notches on S and
4 notches on N edges
6 notches on E. face. dug pits 18×18×12 ins in each Sec. 5½ft. dist. and raised a mound of earth 2ft. high 4½ft base alongside

Land - Table land. S. smooth and gently rolling prairie
Bluffs South slope broken

Soil Table land 1st rate farm land. Bluffs 2d rate
No timber

Exterior Boundaries T33N R.11W.

Chains At 4 PM local attraction has increased Va 2' South bet. Secs 25 and 30.

Va 12° 03' E.

Over rolling ground descending

670 Ravine 6 ft lower than Cor. course S.E.

17.45 Road bears E & W

20.70 Intersect the left bank of Niobrara River bears N. 87½° W. & S 87½° E

Set a sand stone 18×10×4 ins 12 ins in the ground for meander Cor. to fractional Secs. 25 and 30 marked "M C" on S. face. dug a pit 36 ins sq 1 ft deep 8 lks N of stone and raised a mound of earth 2 ft. high 4½ ft base alongside

To connect the above Meander Cor. with the meander Cor. bet. fractional Secs 25 and 30 of previous survey on the right bank of the River I go to the Cor. to Secs 25, 30, 31 and 36 which is a mound of earth pits in each Sec. The line bet. Secs. 25 and 30 was run in 1871 at a Va. of 13° 20' E. and distance to the M.C. on right bank of Niobrara River 34 chs I allow 1° 16' for difference of Va for 19 years and run North bet. Secs. 25 and 30

Va 12° 04' E.

And at 30.80 chs intersect right bank of Niobrara River, this taken from 34.00 chs leaves 3.20 chs of the river bank which has been washed away. I am unable to connect the meander Corners on opposite banks of the River. However I set a flag on the North side of River at a point 12.85 chs West of Meander Cor.

July 27 1890.

Note—The stone used for corners for the exterior boundaries of this Tp. being hard flat sand stones as we found them, along the hill sides it was impossible to break them into suitable size with sharp corners without danger of destroying the entire stone. I find that it was impracticable to cut notches upon

Exterior Boundaries T33N R11W

Chains the corner of the stones so as to be clear and intelligible, as is contemplated by the manual of Instructions. I have therefore caused the stones to be placed with the edges in the direction in which the line was run except when otherwise mentioned, and have cut the notches or horizontal bars on the edges and faces instead of on the corners. The horizontal notches or bars are not less than 2 ins in length and cut sufficiently deep so as to be easily read

Latitudes, Departures and Closing Errors

Lines designated as	True Bearing	Dist	Latitudes N	Latitudes S	Departures E	Departures W
W. boundary	North	340.70	340.70			
N boundary	East	479.33			479.33	
E boundary	South	480.		480.00		
S boundary	West	207.10				207.10
Meander		319.80	138.65	1.30		273.98
Convergency 4¼ miles					47	
			479.35	481.30	479.80	481.08
Totals				479.35		479.80
Error in Lat				1.95	Err. in Dep. 1.28	

General Description

The general surface of this Township is rolling. Ponca Creek courses through the northern part; The Valley through which this creek runs is about half a mile wide, clay soil and is good farm land. Between it and the Niobrara River is a high table land with a north and South slope to above named river and Creek, the summit of which is about a mile North of the Niobrara River. The table land is quite broken by ravines, leaving only a small portion of desirable farm land

Exterior Boundaries T 33 N R 11 W Cont'd

Chains There is a wagon road along the summit being the only practicable road up and down the river

The land North of Ponca Creek is much smoother and in general is desirable farm land

There are a number of settlers in the North part of the Township. E. W. Whiting related to the Sioux Indians, lives in Sec 25 about 40 chains West of the line; he has a frame house and considerable cultivated land

There is considerable timber along Ponca Creek, mostly Willow Cottonwood Boxelder Ash and Oak: there is also Willows Cottonwood boxelder, Elm Ash and some Oak along the Niobrara River.

About a quarter of a mile down the river in fractional Sec. 30 a combination Iron and wooden bridge is being built at a point where the river is only about 200 ft wide.

Exterior Boundaries T 34 N R 11 W.

Survey commenced Aug. 3 1890 with Burts improved Solar Compass made by Wm J. Young of Phila Pa, and numbered 4432. In perfect adjustement

At the Corner to Townships 33 and 34 N Ranges 11 and 12 W. In Lat. 42° 52' N. Long. 98° 46' W. at 8h 15m P.M. by my watch, adjusted to mean time by Solar Compass this afternoon.

I observe Polaris in accordance with the Manual of instructions on page 72 and find the magnetic bearing of the Star to be N 10° 40' W.

I drive a picket on the line thus established 2 chs N of the Cor.

		h	m
Astronomical time by watch Aug 3		8 -	15
Tabular local M.t. U.C. of Polaris Aug 1			
(Tab. I)	16. - 35.0		
Reduction for 1 day	3.7 -	16	31.1
Diff is hour angle of Polaris at Obs.		15	44.
Subtract from		23	56.1
Argument for Table II		8 -	12
Azimuth of Polaris for Lat. 43° Tab II		1°	26' E
North end of Needle		10°	40' E
The Sun is the Va.		12°	06' E

Which is also the mean declination by table in the manual page 56.

I lay off the azimuth 1°-30' to the N and mark the true meridian so found.

Aug 3 1890

Aug. 4th at 6 A.M. I find the magnetic bearing of the line established last night to be N 12° 10' W By table on page 55 of the manual the mean declination is 12°-06' E

I begin at the cor. to Tps 33 and 34 N Rs 11 and 12 W, which is a sand stone, firmly set and properly marked and witnessed as herein before described in the note of Survey of Exterior boundaries of Tp 33 N R 11 W. page 14.

Thence I run

North bet. Secs. 31 and 36.

Va. 12° 10' E.

Over rolling and broken ground
descending
4.50 Short ravine 15 ft deep course N.W. forms about
a chain East of line - and ascend
6.50 point of hill between ravines. descend
9.00 Ravine course W. ascend over rolling ground
36.30 Ravine course N.W. 10 ft deep
40.00 Set a sand stone 15 X 10 X 3½ ins. 10 ins in the ground
for ¼ Sec Cor. Marked ¼ on W face, dug pits
18 X 18 X 12 ins. N and S. of stone 5½ ft distant and
raised a mound of earth 1½ ft high 3½ ft. base
alongside
53.00 Ravine course N.W. 15 ft. deep
68.50 Ravine course N W
79.00 Enter Valley and leave hills bears N. E. and S. W.
80.00 Set a sand stone 20 X 14 X 4 ins, 15 ins in the ground
for Cor. to Secs. 25, 30, 31 and 36, marked
1 notch on the S
5 notches on the N and
6 Notches on the E faces. dug pits 18 X 18 X 12 ins
in each Sec 5½ ft dist. and raised a mound
of earth 2 ft high. 4½ ft base alongside.
Land rolling and broken
Soil - clay and sandy 3rd rate
Timber, a few small trees and bushes in
ravines N of Tp corner.

North bet. Secs. 25 and 30

Va. 12° 10' E

Up Creek Valley
9.40 Cross dry creek (Stony Creek) Water in holes course W
18.00 Same dry creek. water on line 10 links wide
course S.E.
40.00 Set a sand stone 16 X 10 X 5 ins - 11 ins in the ground
for ¼ Sec Cor. Marked - ¼ on W face, dug pits
18 X 18 X 12 ins. N and S of stone 5½ ft dist. and
raised a mound of earth 1½ ft high 3½ ft base
alongside.
40.50 Same dry creek course S.W.
58.10 Same dry creek course S.E.
70.40 Same dry creek course S.W.

Chains
79.50 Same dry creek course E
80.00 Set a sand stone 24 X 12 X 4 ins. 18 ins in the ground
for Cor. to Secs. 19, 24, 25 and 30. Marked
2 notches on the S
4 notches on the N edges and
6 Notches on the East face. dug pits 18 X 18 X 12
ins in each Sec. 5½ ft dist. and raised a mound
of earth 2 ft high 4½ ft base alongside
Land undulating, Valley broken by the windings
of the creek across narrow valley
Soil is black clay loam 1st rate
No timber on line. There is a small clump in
bend of creek along the West Bluff

At 8 A.M. diurnal change has increased
the Va. 3'
North bet. Secs 19 and 24

Va 12° 13' E

Up Creek Valley
8.10 Same dry creek course S.W.
21.00 Same dry creek course N E
25.00 Leave valley and enter foot hills bears S.E. and N.W.
37.50 Enter valley bears E and W. descend steep bank
15 ft high
40.00 Set a sand stone 15 X 10 X 4 ins, 10 ins in the ground
for ¼ Sec Cor. marked - ¼ on W face, dug pits 18 X 18
X 12 ins N and S of stone 5½ ft dist. and raised a
mound of earth 1½ ft high 3½ ft base alongside
44.90 Same dry creek course S W
47.20 Same dry creek course S E.
55.25 Same dry creek course S W at foot of high bank
60.95 Same dry creek course N E.
61.00 Leave valley and ascend bank 10 ft high bears N E
and S W. Thence over foot hills
80.00 Set a sand stone 20 X 15 X 4 ins 15 ins in the ground
for Cor. to Secs. 13, 18, 19 and 24. - marked,
3 Notches on N and S edges and
6 Notches on E face. dug pits 18 X 18 X 12 ins in
each Sec 5½ ft dist. and raised a mound of earth
2 ft high 4½ ft base alongside
Land - Valley and low foot hills

Exterior Boundaries T 34 N R 11 W Continued

Chains Soil clay loam 1st rate – The valley is broken by the windings of the creek
Timber – There are a few trees and some brush along the sides of the broken bluffs – of no value

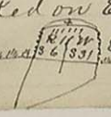
At 9 a.m. local attraction has increased Va 3' North bet. Secs. 13 and 18
Va 12° 16' E.
Over undulating foot hills
34.00 ascend West slope of a stony hill
40.00 Set a hard sand stone 30X20X3 ins in a mound of stones 2 ft high 3 ft base and raised a mound of stone 1½ ft high 3½ ft base alongside marked Stone ¼ on W face
Note – Being stony, impracticable to set stone in the ground, or dig pits
Descend North slope
48.00 Leave foot hills and enter Valley bears N E and S W.
77.90 Same dry creek course W
80.00 On South edge of low 2nd bottom 6 ft high
Set a sand stone 16X8X4 ins 11 ins in the ground for Cor. to Secs. 7. 12. 13 and 18. marked
4 notches on the S end
2 notches on the N Edges end
6 notches on the E face. dug pits 18X18X12 ins in each Sec 5 ft dist. and raised a mound of earth 2 ft high 4½ ft base alongside
Land – gently rolling Valley and stony foot hills
Soil in Valley is black loam 1st rate
No timber.

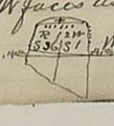
At 9:45 a.m. ~~[illegible]~~ local attraction has increased the Va 3'
Diurnal change has diminished Va. 2'
North bet Secs. 7 and 12
Va. 12° 15' E.
Over rolling valley
14.60 Same dry creek. water on line course S.E.
16.70 West bend of slough deep hole of clear fresh water
Course to the bend is S.W. from bend is S.E.
17.00 Leave valley and ascend sloping hills to tableland

Exterior Boundaries T 34 N R 11 W Continued

Chains bears N E and S W.
26.70 Same slough course S E.
40.00 Set a hard sand stone 24X12X4 ins 18 ins in the ground for ¼ Sec Cor. marked ¼ on W face dug pits 18X18X12 ins N and S of Stone 5½ ft dist. and raised a mound of earth 1½ ft high 3½ ft base alongside
Over smooth table land
80.00 Set a hard flinty sand stone 20X14X4 ins 15 ins. in the ground for Cor to Secs 1. 6. 7 and 12. marked
5 notches on the S end
1 Notch on the N Edges end
6 notches on the E face. dug pits 18X18X12 ins. in each Sec 5½ ft dist. and raised a mound of earth 2 ft high 4½ ft base alongside
Land – rolling, broken by the dry creek
Soil – black clay loam 1st rate. Table-land 1st rate
No timber

At 10-30 a.m. diurnal change has reduced Va. 2'
North bet Secs. 1 and 6
Va 12° 13' E.
Over undulating tableland
32.50 Drain course S W (shallow)
40.00 Set a sand stone 18X10X5 ins 12 ins in the ground for ¼ Sec Cor – marked – ¼ on W face. dug pits 18X18X12 ins N and S of Stone 5½ ft. dist. and raised a mound of earth 1½ ft high 3½ ft base alongside
45.70 Ravine course S W (shallow)
Gently ascending ground
80.00 Set a hard sand stone 27X14X4 ins 20 ins in the ground for Cor. to Tps 34 and 35 N Ranges 11 and 12 W. Set with flat sides to E and W and marked
6 Notches on each of the four sides and
T 34 N on S end
T 35 N on N edges
R 11 W on E end
R 12 W on W faces
with Secs marked on E and W faces as shown in diagram A.





Exterior Boundaries T34N R11W Continued

dug pits 24x24x16 ins on line N. S. E and W of stone 6 ft. disk and raised a mound of earth 2½ ft high 5 ft base alongside

Note — This corner stands on summit of a small round clay knoll, about 6 ft higer than surrounding prairie

Land - gently rolling.
Soil 1st rate farm land
no timber

Aug 4th 1890

I now search for the SW boundary of Ft Randall Military Reservation. not finding any evidence of monuments described in original survey I go about 5 miles to the NW. where I find on the east bank of Joe Ellis Creek, two round cedar posts about 4 ins in diameter, and 4 ft long above ground set firmly in the ground, with a mound of lime rock around each post.

I set my instrument at the post on the E side of wagon road running from Ft Randall to Spotted Tail. Post on West side of road bears North 64° W. 1.44 chs distant.

The Commandant of Ft. Randall having been previously asked for definite information as instructed by the General Land Office has described the above corners as being original monuments established by Lieut Clark 4th Artillery in 1860.

From the above described corner I run South 53° E, Va 12° 15' E, marking my line at every 40 and 80 chains and at 3 miles marked the point in a small basin on a high hill

From the Eastern rim of said basin I have an unobstructed view of the stone monument on bank of Joe

Ellis Creek and the S. E. corner of said Reservation where I have caused a flag to be erected, behind the Iron monument 8 ins wide and 14 ft high.

I now place my instrument on the line between said monuments.

I now offset from the temporary 3 mile point by Table III page 86 of the Manual 5.95 chs. to the new line, which has a bearing N 51° 35' W and S 51° 35' E, by Solar Compass.

I now run S 51° 35' E. on true line with S E corner of Reservation for foresight and at 5 ms 6.24 chs set temporary corner

Aug 4 1890

West Boundary of Fractional Tp. 35 N R 11 W.

At 6 A M Aug 5th 1890 I set my instrument over the corner to Tps 34 and 35 N Ranges 11 and 12 W. and adjusted it to a true meridian with Solar Apparatus which I find to be N 12° 17' W. Va. 12° 17' E

Thence I run
East on a true line bet. Sec 6 and 31.
Va 12° 17' E.

Over undulating gently descending ground.

2.76 Intersect SW boundary of Ft Randall Military Reservation at the temporary corner set last night.

In place of the temporary corner I set a hard sand stone 20x16x4 ins, 13 ins in the ground for closing corner to Track Secs 6 and 31. marked —
1 Notch and C. C, on W edge
S 6 on S and
S 31 on N faces and
RBS on E edge, dug three pits 24 x 18 x 12 ins. one pit N 51° 35' W
One S 51° 35' E on Reservation line and one SW at right angles to said line 5½ ft distant from stone and raised a mound of earth 2 ft high 4½ ft base alongside

Exterior Boundaries T.34N R.11W. Continued

Chains Land gently rolling.
Soil dark clay loam 1st rate
No Timber. Thence I pass

Thence I run S 51°35' E on a true line along N.E. boundary of Frac Tp 34 (being the S.W boundary of Ft Randall Military Reservation) I set temporary posts at every 40 and 80 chs to mark the line for reference in closing the Sub-division lines

Va 12° 17° E.

Over gently rolling prairie
14.20 Ravine Course E
232.00 Ravine Course E
250.00 Road bears N and S
257.44 Ravine Course S
322.50 Ravine Course E
336.10 Ravine Course S.E.
339.30 Same ravine Course N E
340.00 Same ravine Course S E
358.75 Ravine Course S E
387.07 Road bears N and S
439.85 Ravine Course S E.
440.85 Same Ravine Course S E
444.45 Ravine Course N E
449.85 Enter Valley bears E and W
455.55 Dry Creek Course N E. water in holes
461.55 Leave Valley bears E and W and Enter table land 10 ft high
525.00 Ravine Course N E 10 ft deep
501.55 Rocky point in N bend of a ravine
505.30 Same ravine Course S E.
508.90 Same ravine Course N E
518.95 Ravine Course S W
539.85 Ravine Course N W
607.68 Set temporary Corner for closing Corner to Frac. Secs 25 and 30 on the line between Ranges 9 and 10 West. Which I proceeded to establish, according to the notes recorded on page 7

Exterior Boundaries T.34N R.11W Continued

Chains of the Survey of West boundary of Range 10 W.

The length of the N.E. boundary of Tp 34 N of Range 11 W. is therefore 7 miles. 47.68 chs

Note. The entire length of the S.W boundary of Ft Randall Military Reservation, from the Stone monument on E side of road from Ft Randall to Spotted Tail. on for's Ellis Creek to the Iron monument at the S.E. Corner which I have measured is composed of the following distances.

	mls	chs	lks
From Stone Monument to Closing Corner between Frac. Secs 6 and 31 on the North boundary of Tp.	5	6	24
North East boundary of Tp	7	47	68
From Closing Corner between Ranges 10 and 11, to Iron Post	1.	12.	44
Total	13 -	66 -	36

Land gently rolling, Soil dark clay loam
No timber

Latitudes, Departures and Closing Errors

Lines designated as—	True Bearing	Dist	Latitudes N.	Latitudes S.	Departures E.	Departures W.
N. boundary	North	480.00	480.00			
N. boundary	East	276			276	
N.E boundary	S51° 35' E	607.68		377.60	476.12	
E. boundary	South	102.74		102.74		
S boundary	West	479.33				479.33
Convergency					.67	
			480.00	480.34	479.55	479.33
Totals				480.00	479.33	
Error in Latitude				.34		
Error in Departure					.22	

General Description

This a good Township. It lies on high table land gently rolling, with a gentle N and S slope from a low dividing ridge that runs N westerly and S easterly from near the NW corner to the N E corner of Sec 36.

Soil is dark clay loam producing a good growth of buffalo wire, and Bluejoint grasses. Tall coarse grass grows along the ravines

Excepting a few scattering trees there is no timber in the township.

Stone of a hard sand stone variety is found along Storm Creek. Sufficient was seen to supply corners for the subdivision lines of this Township

There are a number of settlers in the township.

Exterior Boundaries T 33 N R 12 W

Chains Survey commenced Aug 11th 1890 with Burts improved Solar Compass made by Wm J Young of Phila Penn. and numbered 4432 in perfect adjustment

At 8 O'clock a m. I set my Compass over the center of the corner to Townships 33 and 34 N of Ranges 11 and 12 W. which is a sand stone firmly set and properly marked and witnessed as herein before described in the notes of Survey of Exterior boundaries of T 33 N R 11 W. on page 14.

I adjust my instrument to a true meridian by the Solar apparatus which agrees with observation of Aug 3rd. The magnetic bearing of the line thus determined is N 12° 13' W (at this hour 8 a m)

Thence I run

West on a true line bet. Secs 1 and 36
Va 12° 13' E.

Over rolling ground

5.00 descend

21.50 Enter Valley bears N and S

28.50 Storm Creek, dry on line, 4 ft deep, Course S

29.00 Leave Valley and begin ascent of gently sloping hill. Valley bears N and S

40.00 Set a sand stone 16 x 10 x 4 ins - 11 ins in the ground for 1/4 Sec Cor. - marked - 1/4 on N face, dug pits 18 x 18 x 12 ins E and W of stone 5 1/2 ft dist. and raised a mound of earth 1 1/2 ft high 3 1/2 ft base alongside

45.00 Top of sharp divide bears N W and S E. descend along S slope of bluff

53.00 Enter Valley, leave bluffs, bears N W and S E

80.00 Set a sand stone 16 x 10 x 3 1/2 ins. 11 ins in the ground for Cor. to Secs. 1, 2, 35 and 36 - marked - 1 notch on E, 5 notches on W and 6 notches on S faces dug pits 18 x 18 x 12 ins in each Sec, and raised a mound of earth 2 ft high 4 1/2 ft base alongside

Land rolling

Soil clay on E 45 chs 2nd rate farm land
W 35 chs dark sandy soil 2nd rate

Exterior Boundaries of T 33 N R 12 W Cont'd

Chains Timber - There is some brush along Storm Creek, and at the foot of bluffs south of the line along Ponca Creek

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West on a true line bet Secs 2 and 35
Va, 12° 13' E

Over level valley
6.50 Ponca Creek, banks 8 ft high, running water 15 links wide, runs S.
39.00 Leave Valley and enter bluffs bears N W and S E
40.00 Set a hard sand stone 18 x 9 x 5 ins, 12 ins in the ground for 1/4 Sec. Cor. Marked - 1/4 on N face, dug pits 18 x 18 x 12 ins. E and W of stone 5 1/2 ft dist and raised a mound of earth 1 1/2 ft high 3 1/2 ft base alongside
Ascend along slope of bluff through brush and oak timber
46.50 Gulch 20 ft deep course N
49.50 Top of bluff and enter smooth table land bears N W and S E. The bluffs I estimate 100 ft higher than creek.
66.80 Road bears N W and S E.
80.00 Set a hard sand stone 24 x 16 x 5 ins - 18 ins in the ground for cor. to Secs. 2, 3, 34 and 35 - marked 2 notches on E. 4 notches on W edges and 6 notches on S face - dug pits 18 x 18 x 12 ins. in each Sec 5 1/2 ft dist. and raised a mound of earth 2 ft high 4 1/2 ft base alongside
Land Valley and Table land level, - bluffs broken
Soil in valley dark clay and sandy loam 2nd rate
Table land clay soil 1st rate
Timber - Some cottonwood, box elder and ash along the creek; brush and trees in bluffs - Timber and brush 6.50 chs

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At 9.30 a.m. diurnal change has decreased
Va 3'
West on a true line bet Secs 3 and 34
Va 12° 10' E
Over level table land
19.80 Drain 5 ft deep, course N
40.00 Set a hard sand stone 16 x 10 x 5 ins. - 11 ins in the

ground for 1/4 Sec Cor. - Marked - 1/4 on N face dug pits 18 x 18 x 12 ins E and W of stone 5 1/2 ft. dist and raised a mound of earth 1 1/2 ft high 3 1/2 ft base alongside.
80.00 Set a hard sand stone, 24 x 10 x 3 ins - 18 ins in the ground for Cor. to Secs 3, 4, 33 and 34 marked 3 notches on E and W edges, and 6 notches on S face, dug pits 18 x 18 x 12 ins in each Sec, 5 1/2 ft dist and raised a mound of earth 2 ft high 4 1/2 ft base alongside
Land undulating
Soil 1st rate clay loam
No timber

At 10 a.m. local attraction has increased Va 3'
West on a true line bet Secs. 4 and 33
Va 12° 13' E.
Over gently rolling prairie
29.70 Drain course N W. 3 ft deep
36.00 Drain course N E. 3 ft deep
40.00 Set a hard sand stone, 16 x 10 x 5 ins - 11 ins in the ground for 1/4 Sec Cor. marked - 1/4 on N face, dug pits 18 x 18 x 12 ins. E and W. of stone 5 1/2 ft dist. and raised a mound of earth 1 1/2 ft high 3 1/2 ft base alongside
79.75 Drain course N E. 2 ft deep
80.00 Set a hard sand stone 48 x 12 x 3 ins - 21 ins in the ground for corner to Secs 4, 5, 32 and 33. marked - 4 notches on the E and 2 notches on W edges, and 6 notches on S face, dug pits 18 x 18 x 12 ins. in each Sec. 5 1/2 ft dist, and raised a mound of earth 2 ft high 4 1/2 ft base alongside
Land - gently rolling
Soil - clay 1st rate farm land
No timber

At 10.30 a.m. the needle has returned to its mean place
West on a true line bet Secs. 5 and 32
Va 12° 10' E
Over gently rolling table land
40.00 Set a hard sand stone 16 x 8 x 4 ins. - 11 ins in the

Chains ground for 1/4 Sec Cor., marked-1/4 on N face dug pits 18x18x12 ins E and W. of stone 5½ft dist- and raised a mound of earth 1½ft high 3½ft base alongside

80.00 Set a hard sand stone, 20x8x4 ins.-15 ins in the ground for Cor. to Secs. 5, 6, 31 and 32, marked- 5 notches on the E and 1 notch on the W edges and 6 notches on the S. face; dug pits 18x18x12 ins. in each Sec. 5½ft. dist and raised a mound of earth 2ft high, 4½ft. base alongside

Land gently rolling

Soil-clay 1st rate farming land

No timber

At 11, a.m., local attraction has increased the Var. 3' West on a true line bet. Secs. 6 and 31

Var 12° 13' E.

Over gently rolling table land

16.15 Ravine course N.E. 6ft deep

37.00 Ravine course N. 4ft. deep

40.00 Set a hard sand stone, 16x10x4 ins-11 ins. in the ground for 1/4 Sec. Cor. marked-1/4 on N. face, dug pits 18x18x12 ins E. and W. of stone 5½ft dist, and raised a mound of earth 1½ft high 3½ft base alongside

79.33 Set a hard sand stone 30x12x4 ins-21 ins. in the ground for Cor. to Townships 33 and 34 N. Ranges 12 and 13 W. marked

T 33 N on S. T 34 N on Edges

R 12 W at top, and below S 31 on N and S 6 on S side of E face. R 13 W at top of W face and below S 36 on N and S. 1. on S side of face of stone

6 notches on each of four sides N. S. E and W. with a + on top of stone

Land gently rolling

Soil clay 1st rate farming land

No timber

At 12 M. Aug 11th I observe Lat and find it to be N 42° 52'

At 2 P.M. Aug 11th I set my instrument over the center of the Township Cor. to 33 and 34 N Ranges 12 and 13 W and adjust it to a

Chains true meridian; its magnetic bearing is N 12°-15' W. which corrected by table on page 56 of the manual of instructions gives for mean local declination 12° 21' E.

Thence I run

South bet. Secs. 1 and 6

Var 12° 15' E

Over gently rolling prairie

40.00 Set a hard sand stone, 18x10x3½ ins, in the ground for 1/4 Sec Cor. marked-1/4 on W face. dug pits 18x18x12 ins. N and S. of stone 5½ft dist. and raised a mound of earth 1½ft high 3½ft. base alongside.

53.00 Small shallow drain, 3ft. deep course N.W. ascend along N.E. slope

80.00 Set a hard sand stone 20x10x3 ins-15 ins. in the ground for Cor. to Secs. 1, 6, 7 and 12, marked 1 notch on N and 5 notches on S edges and 6 notches on E face; dug pits 18x18x12 ins. in each Sec. 5½ft dist and raised a mound of earth 2ft high 4½ft base alongside.

Land gently rolling, general North slope

Soil Clay - 1st rate

No timber

South bet. Secs. 7 and 12.

Var 12° 16' E

Ascending

3.25 Divide - wagon road bears N.E. and S.W.

11.25 Top of divide between Niobrara River and Ponca Creek, bears S.W. and N.E.

Descend over South slope, rough and broken

39.50 Ravine course S.W.

40.00 Set a hard sand stone 16x12x4 ins-15 ins in the ground for 1/4 Sec Cor. marked-1/4 on W face, dug pits 18x18x12 ins N and S. of stone 5½ft dist. and raised a mound of earth 1½ft high 3½ft. base alongside.

53.50 Sand ravine course S.E. 40 feet deep

80.00 Set a hard sand stone 20x14x2 ins-15 ins, in the ground for Cor. to Secs 7, 12, 13 and 18, marked

Exterior Boundaries T 33 N R 12 W Continued

Chains 2 notches on the N and 4 notches on S. edges and 6 notches on E face, dug pits, 18x18x12 ins. in each Sec. 5 ft dist and raised a mound of earth 2 ft high 4½ ft base alongside

Land- South slope rolling 3rd rate soil
North slope clay soil 1st rate

No timber

At 3.15 P.M. diurnal Change has increased the Va. 4'

South bet. Secs. 13 and 18

Va 12° 19' E

Over rolling broken South slope

11.10 Ravine Course S.E.

40.00 Set a hard Sand Stone 18x18x3 ins. 12 ins. in the ground, for ¼ Sec Cor. marked ¼ on W face dug pits 18x18x12 ins. N and S of stone 5½ ft dist. and raised a mound of earth 1½ ft high 3½ ft base alongside.

56.20 Foot of hills. enter Valley, bears E and W

65.20 Wagon road bears E and W

67.00 Slough- Course E.
Enter brush and Cottonwood timber

75.73 A cottonwood tree 15 ins diam. cut 2 notches each on N and S. side

78.60 Intersected the left bank of Niobrara River. bank 2 ft high, sandy lined with Willows, Set a hard Sand Stone 20x12x3 ins, 15 ins in the ground for Meander Cor. to Track, Secs. 13 and 18, marked M.C. on S face, dug a pit 36 ins square 1 ft deep, 8 links North of the stone and raised a mound of earth 2 ft high 4½ ft base alongside from which

a White willow. 8 ins. diam. bears N 69° 30' E 45 links dist. marked B.T. M.C. S.18.

a White willow 10 ins diam. bears N 53¾° E 46 links dist. marked B.T. MC. S.18 no other bearings in limits

Land rolling and level hills rolling
Soil in hills Clay 2nd and 3d rate
in Valley Clay and Sandy 1st and 2nd rate

Exterior Boundaries T 33 N R 12 W Continued

Timber along the river bottom is fine Cottonwood trees- brush is Willow and small Cottonwood

— La Mora claiming land under the law of allotment of lands to Indians lives in sec. 18, in SE¼, has a frame house and a number of log buildings

To correct the above meander Cor. with the meander Cor. to track Secs. 19 and 24 of previous surveys on right bank of Niobrara River I go to the Cor. to Secs. 19, 24, 25 and 30. T 33 N. Rs 12 and 13 W. which is a mound of earth with pits in each Sec.

The variation at which the line bet. Secs 19 and 24 was run in 1871 was 13° 20' E. and distance to the Niobrara River. 61.00 chains. I allow for diminished Va for 19 years (since line was run) 1° 16' which makes the present Va, 12° 04' E.

From the above Corner, 19, 24, 25 and 30

I run North bet. Secs. 19 and 24

Va 12° 04' E

At 40.00 chs I find no indications of post mound or pits of original corner

At 51.00 Ravine course N.E.

59.90 chs. Intersected the right bank of Niobrara River. I find no indications of Meander Corner. there being 1.00 chs, washed away by the River. I am therefore unable to connect the Meander Corners on the opposite banks of the River.

Aug 11th 1890.

Latitudes. Departures and Closing Errors

Lines designated as—	True Bearing	Distance	Latitudes N	Latitudes S	Departure E	Departure W.
W. boundary	North	238.60	238.60			
N. boundary	East	479.33			479.33	
E. boundary	South	340.70		340.70		
Meanders		560.02	167.06	66.09	.31	478.93
Convergency 3 miles					.33	
			405.66	406.79	479.97	478.93
Totals				405.66	478.93	
Error in Latitude				1.13		
Error in Departure					1.04	

Exterior Boundaries T 33 N R 12 W Cont'd

Chains	General Description
	This Tp is gently rolling table land S. sloping bluffs and river valley
	The land on table is generally a dark clay loam 1st rate. S. sloping hills, the soil is yellow clay 3rd rate adapted for grazing.
	The valley is very narrow. Clay and sandy soil
	The valley along Ponca Creek is about ½ mile wide, sandy and clay loam
	The timber is Willow and plumbrush-boxelder cottonwood, ash and oak
	The grass is buffalo and short bluejoint, with tall coarse grass in the ravines
	There are a number of settlers in the township

Exterior Boundaries of T 34 N R 12 W.

Chains	
	Survey commenced August 18th 1890 with Butts improved Solar Compass made by Wm J Young of Phila Penn. and numbered 4437 in perfect adjustment.
	At 3.30 P.M. I go to the corner to Tps. 33 and 34 N. Rs 12 and 13 W. which is a hard sand stone, firmly set and properly marked and witnessed as hereinbefore described, on page 34 of the notes of survey of exterior boundaries Tp 13 N R 12 W.
	The mound is totally destroyed and pits nearly filled. I re-dig the pits and raised a mound of earth 2 ft high 4½ ft base alongside
	Latitude is N 42° 52' Long 98° 47' W.
	I now set my Compass over the center of the Corner and adjust it to a true meridian by the Solar apparatus. The magnetic bearing of the true meridian thus determined is N 12° 17' W. which corrected by table on page 56 of printed Manual of Instructions is 12° 21' E.
	Thence I run
	North betn. Secs. 31 and 36
	Va 12° 17' E
	Over gently rolling prairie
1.40	Shallow drain 1 ft deep course N.W.
40.00	Set a hard sand stone, 16 x 8 x 4 ins. 11 ins in the ground for ¼ Sec Cor. marked ¼ on W face, dug pits 18 x 18 x 12 ins. N and S of stone 5½ ft dish and raised a mound of earth 1½ ft high 3½ ft base alongside
80.00	Set a hard sand stone 24 x 17 x 3 ins - 18 ins in the ground for cor to Secs 25, 30, 31 and 36 marked 1 Notch on the S and 5 notches on the N edges and 6 notches on the E face, dug pits 18 x 18 x 12 ins in each Sec, 5½ ft dish and raised a mound of earth 2 ft high 4½ ft base along side
	Land S rolling. No underlitting
	Soil clay loam 1st rate
	No timber

Exterior Boundaries T 34 N R 12 W Continued

Chains North bet. Secs 25 and 30
Va. 12° 17' E
Over gently undulating table land
40.00 Set a hard sand stone, 20×10×3 ins-15 ins, in the ground for 1/4 Sec Cor. marked 1/4 on W. face dug pits 18×18×12 ins N and S. of stone 5 1/2 ft dist. and raised a mound of earth 1 1/2 ft high 3 1/2 ft base along side
80.00 Set a hard sand stone 30×7×5 ins, 21 ins in the ground for Cor. to Secs. 19, 24, 25 and 30. marked 2 notches on S. and 4 notches on N. edges and 6 notches on E. face. dug pits 18×18×12 ins in each Sec. 5 1/2 ft dist. and raised a mound of earth 2 ft high, 4 1/2 ft base along side
Land gently rolling
Soil dark clay loam 1st rate
No timber.

At 4.30 P.M. diurnal change has increased Va. 2'
North bet. Secs 19 and 24
Va 12° 19' E
Over smooth table land
15.00 Top of table land begin descending
20.70 Ravine - Course N W
25.00 Enter Valley - bears N E. and S W
26.15 A dry creek - channel 3 ft deep course N. E.
40.00 Set a hard sand stone 15×12×3 ins. - 10 ins in the ground for 1/4 Sec Cor. marked 1/4 on W. face dug pits 18×18×12 ins N & S. of stone 5 1/2 ft dist. and raised a mound of earth 1 1/2 ft high 3 1/2 ft base alongside.
40.60 Same dry creek course N W
41.75 Same dry creek course N E.
42.50 Leave Valley and ascend; Valley bears E. and W.
47.50 Top of table land; bears E. and W
64.50 Ravine. course E. (heads short distance W. of line)
71.50 Ravine course S E. (heads about 5 chs W.
80.00 Set a hard sand stone, 25×15×6 ins - 18 ins in the ground for Cor. to Secs. 13, 18, 19 and 24. marked — 3 notches on the N. and S. edges and 6 notches on E. face, dig pits 18×18×12 ins. in each Sec 5 1/2 ft.

Exterior Boundaries T 34 N R 12 W Continued

Chains dist. and raised a mound of earth 2 ft high 4 1/2 ft base alongside
Land - Table land and Valley
Table land gently rolling - Valley level
Soil - on table dark clay loam 1st rate
In valley soil is clay broken by the winding & ravine channel deep, narrow and difficult to cross.
No timber

North bet. Secs. 13 and 18
Va 12° 1.9' E.
Over smooth table land
20.00 North edge of table land bears E and W.
34.00 Enter Oak timber, bears E and W
40.00 Set a hard sand stone 16×12×4 ins - 11 ins in the ground for 1/4 Sec Cor. marked 1/4 on W. face dug pits 18×18×12 ins N and S of stone 5 1/2 ft. dist. and raised a mound of earth 1 1/2 ft high 3 1/2 ft base along side. From which
An Elm tree 18 ins diam. bears S 88° W. 70 lks dist. marked B.T. 1/4 S.
An Elm tree 17 ins. diam bears N 38° E. 65 lks dist marked B.T. 1/4 S.
Descending
42.00 Foot of hill and enter Ponca Cr. Valley bears E. and W.
45.50 Ponca Creek - banks 8 ft high. 40 links wide running water is 15 lks wide 6 ins deep and runs E.
Leave timber enter open prairie
68.00 Leave Valley and begin ascending bluffs bears E & W.
77.00 Top of W slope of bluff
80.00 On west slope of gravel hill, Top of hill is about 130 links E and 10 ft higher than corner.
Set a hard sand stone 16×12×4 ins. - 11 ins in the ground for Cor. to Secs. 7, 12, 13 and 18 marked - 4 notches on S and 2 notches on N. edges and 6 notches on E. face, dug pits, 18×18×12 ins in each Sec 5 1/2 ft dist and raised a mound of earth 2 ft high 4 1/2 ft base along side. Hill side very gravely and pits almost impracticable
Land Table land - Valley and hill slopes
Table land level, smoothe, dark clay soil 1st rate

Chains Valley gently rolling, dark clay soil 1st rate
Hill slopes, sandy and gravelly 3d rate
Timber, on south side of Creek bluff is skirted with a fine body of Elm and Oak principally the latter. extending E. and W. from the line
There is a small but fine spring of water near the 1/4 Sec Cor. in Sec 13.

Aug 18 1890

At 6.30 A.M. Aug 19th from a flag station 3 chs S. of the Cor. to Secs. 7, 12, 13 and 18 I take a back sight on a flag on the top of the table land, south of Ponca Creek and bet. Secs. 13 and 18. The magnetic bearing of the line is S 12° 25' E. which corrected by the table on page 55 of the manual of instructions gives for local mean declination 12° 21' E
North bet. Secs. 7 and 12.

Va 12° 25' E.

Over broken ascending ground
28.00 Ravine Course S.E.
31.00 Enter smooth table land bears E and W.
40.00 Set a hard sand stone 14x14x3½ ins - 9 ins in the ground for 1/4 Sec Cor. marked 1/4 on W. face dug pits 18x18x12 ins N and S. of stone 5½ ft dist and raised a mound of earth 1½ ft high 3½ ft base along side
60.50 Ravine Course S E
66.45 Ravine Course S E.
80.00 Set a sand stone 16x12x4 ins - 11 ins in the ground for Cor. to Secs. 1, 6, 7 and 12. marked 5 notches on S and one notch on N. Edges and 6 notches on E face. dug pits 18x18x12 ins, in each Sec 5½ ft dist and raised a mound of earth 2 ft high, 4½ ft base. alongside
Land rolling and level
Soil - on smooth table dark clay loam 1st rate
S. 30 chs broken and ridges are gravelly 3rd rate
No timber

Chains North bet. Secs 1 and 6

Va 12° 25' E.

Over rolling prairie
7.60 Ravine Course S.E.
40.00 Set a sand stone 14x14x4 ins - 9 ins in the ground for 1/4 Sec. Cor. marked 1/4 on W face, dug pits 18x18x12 ins N and S. of stone 5½ ft dist, and raised a mound of earth 1½ ft high 3½ ft base, along side
45.90 Ravine Course S.E.
74.50 Ravine Course S.E.
80.00 Set a hard sand stone 24x12x4 ins, - 18 ins in the ground for Cor. to Tps. 34 and 35 N, Ranges 12 and 13 W. marked —
T 34 N on S Edge
T 35 N on N Edge
R 12 W. at the top, and S 31 and S 6 below
On the N and S. sides of E face
R 13 W at the top and S 36 and S 1 below and on the N and S sides of W. face
6 Notches on each of 4 sides - + cut on top of stone
Corner stands on S slope of hill and nearly at the summit
Land rolling - general south slope
Soil - clay loam 2nd rate
No timber

At 7.30 A.M. The line bet Secs. 1 and 6 has a magnetic bearing of S 12° 27' E
From the corner to Tps 33 and 34 N Ranges 12 and 13 W. I run East on a random line between said Townships, the variation of my compass 12° 27' E. I set temporary half mile and mile corners at each 40 and 80 chains and find the Township line to be 5 miles 78 chains and 45 links long and the falling to be 18 links S of the Cor. to Tps. 34 and 35 N. Rgs 11 and 12 W
The correction for the true line will therefore be 3 links North and 1.45 chs. West per mile; and its course will be S 89° 59' W
E.30 The Cor. to Tps 34 and 35 N Rs. 11 and 12 W

Exterior Boundaries T 34 N R 17 W. Cont

which is a hard sand stone, firmly set and properly marked and witnessed as hereinbefore described on page 20 of the Notes of Survey of Exterior boundaries Tp 34 N R 17 W
At 2 P.M. Aug 19th the magnetic bearing of the line bet. Secs. 1 and 6 is S 12° 04' E. which I determined by a back sight on the ¼ Sec Cor. It also agrees with bearing determined by the Solar Compass at this time. The bearing corrected by the table on page 56 of the manual of instructions gives for mean local declination, 12°-14' E
Thence I run
S 89° 59' W. on a true line bet Secs 1 and 36
Var 12° 04' E
Over gently rolling table land
15.15 Ravine course S.E. 6 ft deep
39.80 Ravine course S.W. 5 ft deep - ascend 2 ft to
40.00 Set a hard sand stone 24x12x4 ins. - 18 ins in the ground for ¼ Sec Cor - marked ¼ on N face dug pits 18x18x12 ins E and W. of stone 5½ ft dist and raised a mound of earth 1½ ft high 3½ ft base alongside. This corner stands nearly to top of bank of low divide (W pit is on the divide E pit in R bend of ravine)
40.10 Low divide 3 ft higher than ravine
41.20 Ravine course S.E. 4 ft lower than divide
46.95 Ravine course S.E. 6 ft deep
71.20 Ravine course S.E. 6 ft deep
80.00 Set a hard sand stone 25x10x4 ins - 18 ins the ground for corner to Secs. 1, 2, 35 and 36, marked - 1 notch on the E and 5 notches on W edges and 6 notches on S face, dug pits 18x18x12 ins in each Sec. 5½ ft dist and raised a mound of earth 2 ft high 4½ ft base alongside
Land undulating.
Soil - Clay loam 1st rate
No timber

S 89° 59' W on a true line bet Secs 2 and 35
Var 12° 09' E
Over rolling ground

Exterior Boundaries T 34 N R 17 W Continued

Chains
9.10 Ravine course S.W. 6 ft deep
38.60 Ravine course S.W. 5 ft deep
40.00 Set a hard sand stone 24x7x6½ ins - 18 ins in the ground for ¼ Sec Cor marked ¼ on W face, dug pits 18x18x12 ins E and W of stone 5½ ft dist and raised a mound of earth 1½ ft high. 3½ ft base. alongside
66.60 Ravine course S.W.
74.80 Same ravine course N.W. 8 ft deep
76.80 Same ravine course S.W. 8 ft deep
78.80 Same ravine course N.W. 8 ft deep
80.00 On S side of ravine and about 1½ ft higher than Channel
Set a hard sand stone 24x12x3 ins - 18 ins in the ground for Cor. to Secs 2, 3, 34 and 35 - marked 2 notches on the E and 4 notches on W edges and 6 notches on S. face, dug pits 18x18x12 ins in each Sec. 5½ ft dist and raised a mound of earth 2 ft high 4½ ft base alongside
Land rolling - W rocks broken along the line by the ravines
Soil - E rocks dark clay loam 1st rate
W rocks along ravines 2nd rate
No timber.

At 3 P.M. Diurnal change has increased 2m 1'
Local attraction has decreased 2m 4'
S 89° 59' W on a true line bet Secs 3 and 34
Var 12° 14' E
Over broken and rolling land - descend
1.20 Same ravine course S.W. ascend bank
3.00 Top of bank
40.00 Set a hard sand stone 18x12x4 ins - 12 ins in the ground for ¼ Sec Cor - marked ¼ on W of Sec, dug pits 18x18x12 ins E and W. of stone 5½ ft. dist and raised a mound of earth 1½ ft high, 3½ ft base alongside
Over broken land
61.65 Ravine course S.W. 20 ft deep
74.55 Ravine course S.E. 20 ft deep
77.00 Enter Valley, Leave hills, bears N and S.
80.00 Set a hard sand stone 24x14x3 ins - 18 ins in the

Exterior Boundaries T 34 N R 12 W Continued

Chains

ground for Cor. to Secs. 3, 4, 33 and 34 - marked 3 notches on the E. and W. edges and 6 notches on S. face, dug pits 18×18×12 ins in each sec. 5½ feet dist and raised a mound of earth 2 ft high 4½ ft base along side

Land rolling and broken

Soil clay 3rd rate farm land

No timber

At 3.30 P.M. local attraction has increased Va 2'

S. 89°59' W on a true line, bet Secs. 4 and 33.

Va 12° 16' E

Over level valley

3.80 A Dry Creek course S.E.

5.00 Leave Valley and enter hills, bears N and S

12.60 Ravine course S E.

19.60 Top of ridge bears N and S. - descend

38.60 Ravine course N W.

39.60 Same ravine course S W.

40.00 Set a hard Sand Stone 24×14×3 ins - 18 ins in the ground for ¼ Sec Cor. marked - ¼ on N face, dug pits 18×18×12 ins E and W. of Stone 5½ ft dist. and raised a mound of earth 1½ ft high, 3½ ft base along side.

41.40 Same ravine course S W.

62.95 Ravine course S.E.

69.60 Top of hill or ridge bears N and S.

80.00 Set a hard Sand Stone, 18×12×3 ins - 12 ins in the ground for Cor. to Secs. 4, 5, 32, and 33. marked 4 notches on E and 2 notches on W edges and 6 notches on S. face, dug pits 18×18×12 ins in each Sec. 5½ ft dist and raised a mound of earth 2 ft high, 4½ ft base along side

Soil Clay loam 3rd rate farm land

No timber

S 89°-59' W on a true line bet Secs 5 and 32

Va 12° 16' E.

Over rolling and broken ground

.65 Ravine course S E. ascent

13.65 Top of hill - descend

Exterior Boundaries T 34 N R 12 W Continued

Chains

31.25 Ravine course S - ascend

33.35 Top of high ridge - bears N and S.

40.00 Set a hard sand stone 24×12×5 ins - 18 ins in the ground for ¼ Sec Cor. Marked ¼ on N. face, dug pits 18×18×12 ins E and W of Stone 5½ ft dist and raised a mound of earth 1½ ft high 3½ ft base along side

Over descending ground

73.30 Ravine course S E. ascend

78.80 Top of ~~top of~~ lower ridge, bears N and S - descend

80.00 Set a hard sand stone, 24×12×3 ins - 18 ins in the ground for Cor. to Secs. 5, 6, 31, and 32, marked - 5 notches on E and 1 notch on W edges and 6 notches on S. face, dug pits 18×18×12 ins in each sec 5½ ft dist and raised a mound of earth 2 ft high 4½ ft base along side.

Land - rolling and broken

Soil - is light clay 3rd rate farm land

No timber.

At 4.30 P.M. local attraction has increased Va 2'

Diurnal Change has increased Va 3'

S 89° 59' W. on a true line bet Secs. 6 and 31

Va 12° 2' E

Over rolling ground descending

29.70 Ravine 25 ft deep course S W. - ascend

34.80 Top of ridge 20 ft high. bears N and S.

Descend

40.00 On West slope of ridge - Set a Sand Stone 15×12×3 ins - 10 ins in the ground for ¼ Sec Cor. marked ¼ on N face, dug pits 18×18×12 ins E and W. of Stone 5½ ft dist and raised a mound of earth 1½ ft high 3½ ft base along side

descending steep hill side

40.50 Enter Valley, bears N and S

42.30 A Dry creek (water in holes) course S.

48.80 Leave Valley and ascend, hills bears N and S

63.00 Top of hill. bears N and S.

71.50 Ravine course S.E. ascend along the S. slope of hill near the top

78.55 The Corner to Tps 34 and 35 N. Ranges 12 and 13 W

Land rolling and broken

Exterior Boundaries T 34 N R 12 W Cont'd

Chains Soil is clay. 3rd rate farm land
No timber excepting a few small willow bushes along dry creek

Aug 19th 1890

Latitudes, Departures and Closing Errors

Lines designated as—	True Bearing	Distance	Latitudes N	Latitudes S	Departures E	Departures W.
N. boundary	North	480.00	480.00			
N. boundary	N 89° 57'	479.55	.18		478.55	
E boundary	South	480.00		480.00		
S. boundary	West	479.33				479.33
Convergency					.67	
			480.18	480.00	479.22	479.33
Totals			480.00			479.22
Error in latitude			.18	Error in Departure		.11

General Description

The surface in this township is level valley N and S. slopes, and gently rolling table land. The Ponca Creek Valley is narrow, principally high first bottoms, from 1/2 to 3/4 of a mile wide.

Soil is generally first rate clay loam. The table land in general is rolling, N and S. slopes towards Ponca Creek. The soil is generally dark clay loam but varies to sand and gravel on the knolls and ridges

Most of the timber is confined to bluffs and valley along Ponca Creek.

Ponca Creek has high banks generally, about 8 ft high, the stream of running water is about 10 links wide and 6 ins deep.

There are a number of settlers in the N E. and S part and along the Creek.

The stone for corners, I obtained from Sec 16 T 33 N R 11 W. for W boundary and for N boundary from the bluffs along Storm Creek, Sec 18 T 34 N R 11 W.

Exterior Boundaries T 33 N R 13 W.

Chains Survey commenced Aug. 27th 1890. with Burts improved Solar Compass made by Wm J Young of Phil'a, Penn, and numbered 4437, in perfect adjustment.

This corning at the Cor. to townships 33 and 34 N Ranges 12 and 13 W. in accordance with the instructions contained in the printed manual page 72. I observe Polaris at 8h - 20m P M by watch which was set to mean time by Solar Compass this afternoon at 3.30. The latitude 42° 52' N Longitude. 98° - 54' W

I find the Magnetic bearing of Polaris to be N 10° - 35' W

Local Astronomical mean time of Observation

1890 Aug 27	8h 20
Tabular Mean time of U C of Polaris at observation Sept 1st	14h 33.5
Reduction for 6 days (add)	2.34
Local mean time of obs, Aug 26	14 57
which subtract from time of Obs leaves hour angle of Polaris	17 33
Subtract from	23 56
Argument for Tab II	6 23
Azimuth	1° 43' E
North end of needle	10° 38' E
The sum is the variation	12° 21' E

Which is also the mean declination by table page 56 of manual

I lay off azimuth 1° 43' to the West and drive a picket 3.92 chs N of Cor. to mark the true meridian so found

August 27th 1890

At 7.30 A M. August 28th I take the magnetic bearing of the true meridian, to be 12° 21' E at the corner above mentioned which is a hard sand stone, firmly set and properly marked and witnessed as heretofore described on page 34 of the notes of survey of exterior boundaries of 33 N R 12 W.

The mound of earth is again totally destroyed by herds of cattle in its vicinity, and the pits

Chains

partially filled. I now dig the pits 24x24x 14 ins and raise the mound of earth 2 ft high 4½ ft base alongside.

Thence I run

West on a true line bet. Secs. 1 and 36.

Va 12° 24' E

Over gently rolling table land

40.00 Set a hard Sand Stone 25x17x3 ins – 18 ins in the ground for ¼ Sec cor. marked ¼ on N. face dug pits 18x18x12 ins E and W. of stones 5½ ft dist and raised a mound of earth 1½ ft high 3½ ft base alongside

45.75 Drain course NW 6 ft deep

65.50 Drain course N 2 ft deep

66.20 Drain course N.E.

80.00 Set a hard Sand Stone (flinty) 24x15x3 ins – 18 ins in the ground for Cor. to Secs. 1, 2, 35 and 36 marked – 1 notch on E and 5 notches on W. edges and 6 notches on S face, dug pits 18x18x12 ins in each sec. 5½ ft dist. and raised a mound of earth 2 ft high 4½ ft base alongside

Land gently rolling

Soil – dark clay loam 1st rate

No timber

West on a true line bet. Secs 2 and 35

Va 12° 24' E.

Over gently rolling table land

8.25 Drain course N 2 ft deep

12.15 Road to Mankato. bears N and S.

40.00 Set a hard Sand Stone (flinty) 15x15x3 ins – 10 ins in the ground for ¼ Sec. cor. marked – ¼ on N face dug pits 18x18x12 ins E and W. of stone 5½ ft dist and raised a mound of earth 1½ ft high. 3½ ft base along side

45.70 Road bears NE and SW

48.55 Drain course N

80.00 Set a hard flinty Sand Stone, 18x14x4 ins, 12 ins in the ground for Cor to Secs 2, 3, 34 and 35 marked – 2 notches on E and 4 notches on W edges, and 6 notches on S face, dug pits

Chains

18x18x12 ins. in each Sec. 5½ ft dist and raised a mound of earth 2 ft high 4½ ft base alongside

Land gently rolling

Soil – E 15 chs dark clay loam 1st rate

W 65 chs mixed sandy and clay 2nd rate

No timber

---

9 a.m. Local attraction has increased Va. 4'

West on a true line bet. Secs 3 and 34

Va. 12° 26' E.

Over rolling ground

Descend gently

5.00 Drain course NE. 6 ft deep, gravelly on East bank

Over rolling ground

32.00 Flat Drain course N

38.55 Road – bears N E and SW

40.00 Set a hard flinty Sand Stone 15x15x3 ins 9 ins in the ground for ¼ Sec Cor. marked ¼ on N face, dig pits 18x18x12 ins E and W. of stones 5½ ft dist and raised a mound of earth 1½ ft high 3½ ft base alongside

44.50 Drain – course N 2 ft deep

45.80 Road – bears NE. and SW.

80.00 Set a hard flinty Sand Stone 24x12x6 ins – 18 ins. in the ground for Cor. to Secs 3, 4, 33 and 34 Marked 3 notches on E and W. edges. and 6 notches on S. face dug pits 18x18x12 ins in each sec 5½ ft dist. and raised a mound of earth 2 ft high. 4½ ft base along side

Land gently rolling

Soil – E 45 chs mixed clay and sand. good 2d rate

W 35 chs dark sandy soil 3d rate

No timber

West on a true line bet. Secs 4 and 33

Va. 12° 26' E

Over gently rolling sandy land

40.00 Set a hard Sand Stone 18x10x3 ins – 12 ins in the ground for ¼ Sec Cor – marked – ¼ on N face dug pits 18x18x12 ins. E and W. of stone 5½ feet dist and raised a mound of earth 1½ ft high 3½ ft base

Exterior Boundaries T 33 N R 13 W Continued

Chains	
	alongside
80.00	Set a hard sand stone 18×12×4 ins - 12 ins in the ground for cor. to Secs. 4, 5, 32 and 33, marked 4 notches on the E. 2 notches on the W. edges and 6 notches on the S. face, dug pits 18×18×12 ins in each sec. 5½ ft dist, and raised a mound of earth 2 ft high 4½ ft base alongside
	Land gently rolling
	Soil - Sandy 3d rate
	No timber

At 10 a.m. diurnal change has diminished Va 2'
Local attraction has increased Va. 1'
West on a true line bet Secs. 5 and 32.
Va. 12° 25' E

Chains	
	Over gently rolling ground
8.34	Divide road bears N W and S E.
35.50	Gulch 25 ft deep course S.
37.50	Top of hill - a point of clay land bet. two ravines the main ravine is just South of line course S W.
	Descend
39.55	Gulch course S (20 ft deep) and ascend a steep clay bank ⅓ to top of hill to
40.00	Set a hard sand stone 27×10×3 ins - 21 ins in the ground for ¼ Sec Cor. marked ¼ on N face dug pits 18×18×12 ins E and W of stone 5½ ft dist and raised a mound of earth 1½ ft. high 3½ ft base alongside
	From which an Oak 16 ins diam. bears S 22¾° E 119 links, marked B.T. ¼ sec., no other trees within limits
	Ascend to
40.75	Top of hill
	Over point of clay land
49.70	Spring Branch, clear cold, running water 2 links wide, 3 ins deep punch. Gulch about 40 ft deep - filled with fine body of Oak timber
	Ascend steep worst bank
52.75	Top of South slope of ridge bears N W and S E. - descend
55.85	Short Gulch 15 ft deep course S.E.

Exterior Boundaries T. 33 N. R. 13 W. Continued

Chains	
	Ascend
57.10	Edge of Table land - Thence
	Over gently rolling table land
80.00	Set a hard flinty sand stone 20×15×4 ins - 15 ins in the ground for Cor. to Secs. 5, 6, 31 and 32 - marked 5 notches on E and 1 notch on W. edges, 6 notches on S. face dug pits 18×18×12 ins in each sec. 5½ ft dist and raised a mound of earth 2 ft high 4½ ft base alongside
	Land gently rolling surface E and W. of Gulches
	Soil Sandy 3rd rate
	Between gulches land is rolling
	Soil clay 2nd rate
	Timber - There is heavy Oak timber along the Spring branch, North and S. of line

---

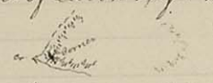
At 10.30. a.m. the needle has returned to its mean place
Local attraction has increased Va 2'
West on a true line bet. Secs. 6 and 31
Va. 13° 27' E

Chains	
	Over gently rolling sandy land
19.50	Top of low abrupt ridge 3 ft high bears N W and S E.
	Over dark sandy soil - level
40.00	Set a hard sand stone 18×10×4 ins - 12 ins in the ground for ¼ sec Cor. marked ¼ on N face dug pits 18×18×12 ins, E and W. of stone 5½ ft. dist. and raised a mound of earth 1½ ft high 3½ ft base alongside.
	Ascend gradually
65.00	Top of table land (W. edge) descend over broken surface
71.00	Top of knoll
	descend abrupt White bank or "blow out"
75.25	Top of low sharp ridge, bears N W and S E.
	descend west slope
78.00	Enter Oak timber
79.33	On steep bank 8 ft high (half way down bank) Set a hard sand stone 28×10×4 ins - 21 ins in the ground for Cor. to Tps 33 and 34 N R's. 13 and 14 W. marked —
	T. 33 N on S. end
	T 34 N on N edges
	R 13 W on E and

Exterior Boundaries T 33 N. R 13 W. Continued

Chains

R 14 W on W. faces
6 notches on each of the 4 sides, with + on top. dug pits 24×18×12 ins, lengthwise on each line N. S. E. and W. of stone 6 ft dist. and raised a mound of earth 2½ ft high 5 ft base alongside.—



from which
An Oak 16 ins diam. bears N 78½° E 14 lks dist marked—T 34 N. R 13 W. S. 31. B.T.
An Oak 12 ins diam. bears S. 3° 10' E. 20 links dist. marked—T 33 N R 13 W. S 6. B.T.
An Oak 15 ins diam. ~~[illegible]~~ bears S 50¼° W 12 links dist. marked T 33 N. R 14 W. S. 1. B.T.
An Oak 18 ins diam. bears N 36½° W 12 8 lks dist marked T 34 N—R 14 W. S. 36. B.T.
Note—This corner stands 8 ft higher than a small Spring branch which runs N.W.—and about 50 lks N and E. therefrom, and about half way down the S.W. point of steep hill about 10 or 12 ft high.
Land, level, and rolling and broken
Soil— E 20 chs Sandy 3rd rate
Next 45 chs. dark Sandy Soil 2d rate
The balance is Clay and white earth
Timber—around the Township Corner is a fine body of Oak and bass wood timber—principally the former, and is found along the banks of Spring Branch
Stone—on South bank on top of bluffs I found hard sand stone, that will furnish quite a number of stone for corners.
The Spring Branch is about 1 links wide an inch deep, and heads a short distance up the short gulch in Sec 6.
Note. The convergency taken from last half mile according to table IX is 67 links

At 12 M. I observe Lgt and find it to be N 42° 52'+
At 2.30 P.M. I set my Compass over the corner to Tp 33 and 34 N. Rs. 13 and 14 W. and adjust it to a true meridian, by the Solar attachment

Exterior Boundaries T 33. N, R, 13 W, Continued

Chains

The Mag. bearing of the true meridian so determined is N 12°-24' W. which corrected by the table on page 56 of manual of instructions gives for local mean declination 12° 27' E.
The Variation at 2.30 P.M. is 12° 24' E
From the above mentioned corner
I run
South bet. secs. 1 and 6
Va 12° 24' E
Descend
.50 Spring Branch, 1 link wide 1 in deep 8 ft below Cor. runs N W.
4.00 Leave timber
4.50 Top of hill bears E and W.
Descend
15.50 Gulch filled with Oak timber Course S W.
Ascend
18.00 Top of hill bears N E. and S W.
Descend
19.90 Ravine Course S.W.
27.00 Ravine—filled with Oak timber (1 ch wide) Course S W.
40.00 Set a hard sand stone 24×12×4 ins—18 ins in the ground for ¼ sec cor. marked—¼ on W. face dug pits 18×18×12 ins, N and S. of stone 5½ ft. dist, and raised a mound of earth 1½ ft. high 3½ ft base alongside.
48.15 Ravine, course S W.—ascend
54.00 Top of hill—descend
79.80 Leave hills and enter Niobrara Valley—bank about 8 ft high bears N W. and S E. about 50 links West of mouth of ravine
80.00 Set a hard sand stone 25×12×5 ins—18 ins in the ground for cor to secs. 1, 6, 7 and 12—marked—5 notches on the S. edge, one notch on N. edge and 6 notches on E. face, dug pits 18×18×12 ins in each sec, 5½ feet dist, and raised a mound of earth 2 ft high and 4½ ft base alongside
Land rolling and broken by ravines. General South slope, and gradual
Soil—clay 2nd and 3d rate
Timber there is timber in some of the ravines N. of ¼ sec Cor.

5000
48.15
51.85

chains South bet. Secs 7 and 17
Var 17° 7' E.

Over level valley

15.00 Intersected the left bank of North Channel of Niobrara River, bank sandy 4 ft high

Set a hard sand stone 14 x 11 x 4 ins - 9 ins in the ground for Meander Cor. to fractional Secs. 7 and 12. marked. M. C. on S face. dug a pit 36 ins square 1 ft deep, 8 lks N of Stone and raised a mound of earth 2 ft high, 4 ft base alongside, from which

A cottonwood 32 ins diam bears N 36¾° W 109 lks dist marked M.C. B.T. T. 33 N. R. 14 W. S. 17, No other trees within limits.

Land level bottom

Soil - sandy 3rd rate

Timber - brush and few cottonwood trees.

To connect the above M.C. with that of previous survey on S. side of River, I go to the Cor. to Secs. 13, 18, 19 and 24, T 33 N Rs. 13 and 14 W. which has a post in mound of earth marked for Cor. to Secs 13, 18, 19 and 24, T 33 N Rs. 13 and 14 W.

The line to the river from this point at a Var. of 13° 25' E. and the distance 47.50 chs. according to the notes of the original survey as furnished by the General Office, I allow 1° 16' for difference of Var. and run North on the range line bet. Secs 13 & 18. Var 12° 09' E. and

At 40.00 find No ¼ Sec Cor. at 80 chs being in large Corn field find no Corner, I continue the line North bet. Secs. 7 and 17.

At 30 chs leave broken land, enter River bottom, Willows and large timber

At 40 chs find no trace of Corner, pits or bearing trees. At 46.80 chs Intersect Right bank of Niobrara River. The above distance taken from 47.50 chs leaves 70 links that have been washed away by the river

I find no evidence of a M.C. I am therefore unable to connect the Meander Corners of surveys

on the opposite banks of the River

August 24 1890

Latitudes Departures and Closing Errors.

Lines designated as	True Bearing	Distance	Latitudes N	Latitudes S	Departures E	Departures W
W. boundary	North	95.00	95.00			
N boundary	East	479.33			479.33	
E. boundary	South	238.60		238.60		
S boundary	Meanders	596.65	211.52	67.45		479.97
convergency 1½ Mile					.12	
			306.52	306.05	479.45	479.97
Totals			306.05			479.45
Error in Latitude			.47	Error in Departure		.52

General Description

This township has high rolling table land south sloping clay bluffs, and river valley

The tableland is generally mixed sand and clay soil. 3rd rate

The bluffs have a long south slope broken by deep ravines, which begin at the summit of the divide or tableland, and course south to the valley, where they spread out and become a part of the valley.

The valley is generally sandy soil and of 2nd and 3rd rate land

There is some small clumps of Oak timber in the ravines and considerable Cottonwood timber large and small, along the river. Also a great deal of brush - Willow, dogwood, buffaloberry, prickly ash and plum

There are two or three settlers in the township

Exterior Boundaries T 34 N. R 13 W. Continued

Survey commenced September 4th 1890, with Burts improved Solar Compass, made by Wm J. Young of Phil'a Penn, numbered 4413 and in perfect adjustment

Before dark I set my Compass over the flag bet Secs. 1 and 6, on the ridge 4.50 Chains South of the Cor. to Tps 33 and 34 N Ranges 13 and 14 W.

I take a back sight to the Southward to a flag bet the said Secs. 1 and 6. I now set a picket bet. Secs. 31 and 36 on a Clay ridge 6.75 chs N of the above mentioned Tp Cor.

Latitude of Tp Cor. 42° 57' N and

Longitude 98° 54' W. From the picket above described

I observe Polaris in accordance with the instructions on page 72 of manual at 8.30 P.M. by my Watch compared with Solar Compass at 2.30 P.M., Magnetic bearing of Star is N 10° 42' W

Local Astronomical mean time of observation is 1890 Sept 4th — 8h 30m

Tabular local M.C. of Polaris Sept 1	14	33.5
Reduction 3 days (Sub)		7.8
Local Mt M.C. of Polaris Sept 3	14	25.7
Which taken from time leaves the hour Angle of Polaris	18	04.3
Subtract from	23	56.1
Argument for Tab II	5	51.8
Azimuth	1°	46' E
North End of Needle	10°	42' E
The Decl is the Var	12°	27' E

I lay off Azimuth to the West and drive a picket on a point North of a Gulch about 32.5 chs dist. on the line thus determined

Sept 4 1890

At 6 A.M. Sept 5th, From the point of observation, I take the magnetic bearing of the meridian established last night

The magnetic bearing of the true meridian is N 12° 29' W. which corrected by table on page 55 of the Manual of instructions gives for local mean declination 12° 27' E. By taking a back sight to the

Exterior Boundaries T 34 N. R 13 W Continued

Chains

South. I find that the Tp Cor. is on line with the meridian established.

I begin at the Cor. to Tps 33 and 34 N, Rs. 13 and 14 W. which is a hard sand stone, firmly set and properly marked and witnessed as herein before described on page 52 of the notes of survey of Exterior boundaries Tp 33 N R 13 W.

Thence I run

North bet. Secs. 31 and 36

Var 12° 29' E.

Over rolling ground

1.50 Drain course SW.

2.50 Leave timber

6.75 Top of Ridge bearing N & and S W.

descend

9.25 Gulch course SW.

Ascend

27.00 Enter table land, bears N W and S E.

Over rolling prairie

40.00 Set a hard Sand Stone 14×14×6 ins – 9 ins in the ground for 1/4 Sec. Cor. Marked – 1/4 on W. face dug pits 18×18×12 ins N and S. of Stone 5 ft dist, and raised a mound of earth 1 ft high 3 ft base alongside

80.00 Set a hard sand stone 16×14×6 ins – 11 ins in the ground for Cor. to Secs. 25, 30, 31 and 36, marked – 1 notch on S. and 5 notches on N edges, and 6 notches on E. face dug pits 18×18×12 ins – in each Sec. 5 ft dist, and raised a mound of earth 2 ft high 4 ft base along side.

Land – S. 27 chs rolling and gravelly 3rd rate
N 35 chs. gently rolling sandy and clay soil 1st rate

Timber. there is a little Oak timber at South end of the line near the Tp Cor.

North bet. Secs. 25 and 30

Var. 12° 29' E.

Over gently rolling table land

1.80 Divide road, bears E. and W.

27.00 Drain Course NE. 5 ft deep

36.75 Drain Course E.

Exterior Boundaries T 34 N. R 13 W. continued

Chains
40.00 Set a hard sand stone 18x10x6 ins - 12 ins in the ground for 1/4 sec. cor. marked - 1/4 on W face dug pits 18x18x12 ins N and S. of stone 5 1/2 ft dist, and raised a mound of earth 1 1/2 ft high 3 1/2 ft base alongside

75.00 Ravine course N E. 5 ft. deep

80.00 Set a hard sand stone 18x14x6 ins - 12 ins in the ground for cor. to secs. 19, 24, 25 and 30, marked 2 notches on S. and 4 notches on N edges, and 6 notches on E face, dug pits 18x18x12 ins, in each sec. 5 1/2 ft dist. and raised a mound of earth 2 ft high 4 1/2 ft base alongside.

Land - gently rolling
Soil clay loam 1st rate.
No timber.

North bet secs. 19 and 24

Va. 12° 29' E.

Over gently rolling table land

10.15 Ravine course E.

40.00 Set a hard sand stone 16x10x4 ins - 11 ins, in the ground for 1/4 sec. cor. marked - 1/4 on W. face, dug pits 18x18x12 ins. N and S. of stone 5 1/2 ft dist, and raised a mound of earth 1 1/2 ft high 3 1/2 ft. base alongside.

43.75 Road to Butte City a village about 3 ms. east bears E. and W.

56.30 Drain course S. E.

80.00 Set a hard sand stone 18x14x6 ins. - 12 ins in the ground for cor. to secs. 13, 18, 19 and 24 marked - 3 notches on N. and S. edges, and 6 notches on E face, dug pits 18x18x12 ins, in each sec. 5 1/2 ft dist and raised a mound of earth 2 ft high, 4 1/2 ft base alongside

Land gently rolling
Soil clay loam 2nd rate
No timber

At 7.30 a m local attraction has increased 3'
North bet. secs. 13 and 18

Va 12° - 32' E

Exterior Boundaries T 34 N R 13 W. continued

Chains
Over gently rolling and descending ground,

12.85 Ft Randall and Keya Paha Road, bears N E and S W.

40.00 Set a hard sand stone 18x10x5 ins - 12 ins, in the ground for 1/4 sec. cor. marked 1/4 on W face, dug pits 18x18x12 ins. N. and S. of stone 5 1/2 ft. dist, and raised a mound of earth 1 1/2 ft. high 3 1/2 ft. base alongside

80.00 Set a hard sand stone, 18x12x5 ins - 12 ins, in the ground for cor. to secs. 7, 12, 13 and 18, marked - 4 notches on the S, and 2 notches on N. edges, and 6 notches on E face, dug pits 18x18x12 ins in each sec. 5 1/2 ft. dist. and raised a mound of earth 2 ft high 4 1/2 ft base alongside.

Land gently rolling
Soil - dark clay loam 1st rate
No timber
There is a German settler in N W. corner of S W.4 Sec 18 - with a good sod house and barn he has a well about 15 ft deep, water is plentiful and good.

North bet. secs. 7 and 12.

Va. 12° 32' E

Over gently rolling table land

40.00 Set a hard sand stone 12x12x6 ins - 8 ins in the ground for 1/4 sec. cor. marked 1/4 on W. face, dug pits 18x18x12 ins. N and S. of stone 5 1/2 ft. dist and raised a mound of earth 1 1/2 ft high 3 1/2 ft base, alongside

78.00 Drain course S E.

80.00 Set a hard sand stone 16x14x5 ins - 11 ins in the ground for cor. to secs. 1, 6, 7 and 12 ~~ins~~ marked 5 notches on S. and 1 notch on N. edges and 6 notches on E face, dug pits 18x18x12 ins, in each sec. 5 1/2 ft. dist, and raised a mound of earth 2 ft high 4 1/2 ft base alongside

Land gently rolling
Soil - clay loam 1st rate
No timber

At 9. a m. Local attraction has increased Va. 3'
North bet. secs. 1 and 6

Va 12° 35' E.

Exterior Boundaries T 34 N. R 13 W. Continued.

Chains Over gently rolling ground
40.00 Set a hard sand stone, 18×8×7 ins - 12 ins in the ground for 1/4 sec. cor. marked, 1/4 on W. face dug pits 18×18×12 ins N and S. of stone 5 1/2 ft dist. and raised a mound of earth 1 1/2 ft high 3 1/2 ft base alongside
43.00 Top of bluffs, gravelly, bears E. and W.
Begin descending
57.00 Enter Ponca Creek Valley, bears E. and W.
Over gradually descending valley
80.00 Set a hard sand stone 22×18×5 ins - 15 ins in the ground for cor. to Tps 34 and 35 N. Rs 13 and 14 W. marked -
T. 34 on S. and
T. 35 on N. Edges
R. 13 W. at top and below. S. 31 on N. S. 6. on S. sides of E. face
R. 14 W. at top, and below. S 36. on N. S 1 on S. sides of W. face - 6 notches on each side a + cut on top of stone, dug pits 24×18×12 ins. lengthwise on each line N. S. E. and W. of stone 6 ft. dist. and raised a mound of earth 2 1/2 ft high 6 ft base alongside
Note. This cor. stands in a North bend of Ponca Creek, about 4.00 chs N. is a steep broken blue shale bank - with seams of Crystalized Gypsum. 40 or 50 ft high on North side of the Creek which flows along its base.
Corner is surrounded on the N. and W. with small plum, Cherry, Willow and box-elder bushes
There are no trees large enough for bearing trees within limits.
Land - S 57 chs rolling
Soil sandy and gravelly 3d rate
Balance is Valley, black sandy and clay soil 1st rate.
No timber along the line. On the North and West of the Tp corner is brush along the Creek.

Exterior Boundaries T 34 N R 13 W Continued.

North Bdy -

At 10 a.m. Sept 5th the magnetic bearing of the line bet Secs. 1 and 6 is S 12° 33' W
The needle has returned to its mean place.
From the cor. to Tps 34 and 35 N. Rs. 13 and 14 W.
I run East on a random line bet. said townships the Va. of my compass being 12° 33' E.
I set temporary half mile and mile corners at every 40 and 80 chains, and find the township line to be 5 miles 79 chs and 7 links long, and the falling to be 42 lks. N of the Cor. to Tps 34 and 35 N Rs 12 and 13 W.
The correction for the true line will therefore be 7 lks S. and 93 links West per mile, and its course will be N 89° 57' W.
At 4 P.M. Sept 5th the bearing of the line bet. Secs. 1 and 6. determined by a back sight on a flag, South of the above named Tp. Cor. is S. 12° 22' E. which corrected by table on page 56 of Manual of Instructions, gives for local mean declination 12° 21' E.
From the Cor to Tps 34 and 35 N. Rs 12 and 13 W. which is a hard sand stone, firmly set and properly marked and witnessed as hereinbefore described on page 43 of the notes of survey of exterior boundaries Tps 34 N R 12 W.
I run
N. 89° 57' W on a true line bet. Secs. 1 and 36.
Va 12° 22' E

Over rolling table land
2.55 Short shallow ravine course S E.
13.55 Short ravine course S E.
40.00 Set a hard sand stone 11×9×7 ins - 7 ins in the ground for 1/4 sec cor. marked - 1/4 on N face, dug pits 18×18×12 ins. E. and W. of stone 5 1/2 ft dist. and raised a mound of earth 1 1/2 ft high 3 1/2 ft base alongside
69.50 Ravine, course S. 10 ft deep
80.00 Set a hard sand stone, 16×10×6 ins - 11 ins in the ground for cor. to secs. 1. 2. 35 and 36. marked 1 notch on E and 5 notches on W. edges and 6 notches on S. face. dug pits 18×18×12 ins in each

Chains

Sec. 5½ft disk and raised a mound of earth 2ft high, 4½ft base alongside

Land - E^r rolling, medium clay loam 2^d rate
W^r gently rolling clay loam, good 2^d rate

No timber.

N. 89° 57' W. on a true line, bet Secs. 2 and 35
Va. 12° 42' E.

Over rolling ground

18.90 Ravine course S.E.

27.40 Ravine course S.E.

40.00 Set a hard sand stone 18×12×3 ins. - 12 ins. in the ground for ¼ Sec. Cor. Marked - ¼ on N. face dug pits 18×18×12 ins E. and W. of stone 5½ft disk and raised a mound of earth 1½ft high 3½ft base alongside

53.05 Ravine, course S.W.

61.75 Ravine course S.E. ascend

65.85 Top of ridge, bears N.W. and S.E. descend

77.50 Leave Valley, bears N. and S.
Ascend gentle slope to

80.00 Set a hard sand stone 18×13×6 ins - 12 ins in the ground for cor. to Secs. 2, 3, 34 and 35, marked - 2 notches on E. and 4 notches on W. edges, 6 notches on S. face, dug pits 18×18×12 ins in each sec, 5½ft disk, and raised a mound of earth 2ft high 4½ft. base alongside

Land, rolling and broken

Soil, clay loam, 2^d and 3^d rate farm land

No timber

Local attraction has increased Va 2' (at 5 P.M.)
N 89° 57' W. on a true line bet. Secs. 3 and 34
Va 12° 24' E

Over rolling and broken ground.

4.15 Ravine, course S.E.

24.25 Ravine course S.

28.95 Ft Randall and Keya Paha, Road, bears N. and S.

39.40 Ravine course N.W. 8ft deep

40.00 Set a hard sand stone 16×16×3 ins - 20 ins in the ground for ¼ Sec. Cor. marked ¼ on N. face

Chains

dug pits 18×18×12 ins E. and W. of stone 5½ft disk and raised a mound of earth 1½ft high 3½ft base alongside

45.90 Ravine course N.W. ascend

51.15 Top of high round hill 50ft higher than valley on the West - descend

68.00 Enter Valley bears N. and S. The hill slope is smooth and gradual, making foot of hill and entrance into valley very uncertain

Over Valley

73.15 A dry creek, course S.

74.00 Leave valley and ascend steep bank bears N.W. and S.E.

80.00 Set a hard sand stone 18×10×6 ins - 12 ins in the ground for Cor. to Secs. 3, 4, 33 and 34, marked 3 notches on E. and W. edges, and 6 notches on S face, dug pits 18×18×12 ins. in each Sec. 5½ft disk and raised a mound of earth 2ft high 4½ft base alongside

Land broken and rolling

Soil. - on hills, clay 2^d and 3^d rate farm land
Valley is dark clay loam 1st rate

Timber - There are some Willow and Elm trees along the dry creek.

N. 89° 57' W. on a true line bet. Secs 4 and 33
Va 12° 24' E.

Over rolling prairie

26.55 Ravine course S.E.

32.95 Ravine course S.E. ascend

39.55 Top of ridge, bears N. and S. - descend

40.00 Set a hard sand stone 18×12×3 ins - 12 ins in the ground for ¼ Sec. Cor. marked ¼ on N. face, dug pits 18×18×12 ins. E. and W. of stone 5½ft disk and raised a mound of earth 1½ft high 3½ft base alongside.

59.35 Ravine course S.E.

71.45 Broad ravine, 2 chs wide, course S.E. ascend

80.00 Set a hard sand stone 18×12×5 ins - 12 ins in the ground for cor. to Secs. 4, 5, 32 and 33. marked - 4 notches on E. and 2 notches on W. edges, and 6 notches on S face, dug pits 18×18×12 ins in each Sec. 5½ft disk, and raised a mound of earth 2ft high, 4½ft base alongside.

Exterior Boundaries T 34 N. R 13 W. Cont'd

Chains Land - rolling and broken by ravines
Soil - Clay 3rd rate farming land, good grazing land
no timber.
Sept. 5 1890

At 6.30 a.m. Sept 6 the magnetic bearing of the back line runs is N 77° 31' E. and the Var is 17° 34' E
N. 89° 57' W. on a true line bet Secs. 5 and 32.
Va 17° 34' E

Over rolling prairie
1.85 Top of ridge, bears N. and S. - descend
22.65 Ravine course S. - ascend
30.85 Top of hill, bears N W and S E. - descend
40.00 Set a hard sand stone 16x6x6 ins - 11 ins in the ground for 1/4 Sec. Cor marked 1/4 on N face dug pits 18x18x12 ins E. and W. of stone 5 1/2 ft dist, and raised a mound of earth 1 1/2 ft high 3 1/2 ft base alongside
42.70 Ravine course S.
55.25 Ravine course S E. ascend
59.80 Ravine course S E. ascend
72.85 Small ravine, course S E.
80.00 On top of high hill south slope. Set a hard sand stone, 20x12x5 ins - 15 ins in the ground for Cor to Secs. 5, 6, 31 and 32, marked - 5 notches on E and 1 notch on W. edges and 6 notches on S. face dug pits 18x18x12 ins in each sec. 5 1/2 ft. dist and raised a mound of earth 2 ft high 4 1/2 ft base, alongside
Land, rolling and broken by ravines
Soil, clay loam 3rd rate farming land good grazing land
no timber

At 7 a.m. Local attraction has increased Va 2'
North 89° 57' W. on a true line bet. Secs 6 and 31
Va 17° 34' E
Corr smooth summit of hill south slope
5.60 West edge of hill, deposit of sand stone flagging, where descent begins face of hill bears N. and S.

Exterior Boundaries T 34 N. R 13 W. Cont'd

Chains
17.60 Ravine course S E. 65 ft below summit of hill
Over gently undulating ground
40.00 Set a hard sand stone 16x6x6 ins - 11 ins in the ground for 1/4 sec. Cor marked 1/4 on N. face, dug pits 18x18x12 ins E and W. of stone 5 1/2 ft dist and raised a mound of earth 1 1/2 ft high 3 1/2 ft base alongside
41.35 Drain course S E. ascend
45.00 Ridge bears N W. and S E. descend
55.70 Ravine course S E.
68.50 Leave hills and enter valley bears N W and S E.
70.70 Ponca creek, running water 10 links wide 6 ins deep, runs S E. banks 8 ft high 30 lks right angled width
79.07 The corner to Tps 34 and 35 N. Rs 13 and 14 W
Land rolling
Soil. E. 40 chs dark clay loam good 2nd rate
Next 30 chs light clay soil 2nd and 3d rate
Valley - sand soil 3rd rate
Timber, there is plum, cherry and willow brush along the creek, with vines a few small box elder trees along Cr
Sept 6 1890.

Latitudes, Departures and Closing Errors

Lines designated as —	True Bearings	Distance	Latitudes N	Latitudes S	Departures E	Departures W.
N. boundary	North	480.00	480.00			
N boundary	89° 57' E	479.07		.42	479.07	
E. boundary	South	480.00		480.00		
S. boundary	West	479.33				479.33
Convergency					.67	
			480.00	480.42	479.74	479.33
Totals				480.00	479.33	
				.42	.41	

Error in Latitudes .42 lks
Error in Departure .41 lks

Exterior Boundaries T. 34 N R 13 W. Continued

General Description.

This is a good Township. It is watered in the North part by Ponca creek, which courses through a narrow valley about half a mile in average width

The land slopes from the N. and S. boundaries towards the creek, The soil in the valley is generally a dark clay and sandy loam. On the table land it is a dark clay loam producing good growths of buffalo and blue joint grasses. In the ravines, is found tall coarse grass which is being cut for hay by settlers

There is plum, cherry and willow brush along the creek, with boxelder, cottonwood ash and oak, the latter is chiefly found along the bluffs on S side of Ponca Creek

There are two small villages in the township. Mankota is located in the S E. part and Butte City in the central part.

Exterior Boundaries of T 33 N R 14 W.

chains

Survey commenced Sept 12 1890 at 4.30 P.M. with a Burts improved Solar Compass, made by Wm J. Young of Phila. Pa. and numbered 4432 in perfect adjustment.

I set my compass over the center of the Cor. to Sps 33 N and 34 N. Rs. 13 and 14 W. which is a hard sand stone firmly set and properly marked and witnessed as hereinbefore described on page 53. of notes of Survey of Exterior boundaries of Sp 33 N. R 13 W.

I take a back sight to a flag set on point of Observation, established on night of Sept 4. 1890. on a hill, North of Sp Cor. bet. Secs. 31 and 36.

The magnetic bearing of said line at this time is N 12° 26' W. and the Variation is 12° 26' E.

Thence I run

West on a true line bet. Secs. 1 and 36

Var 17° - 26' E

Through basswood and oak timber, descend

.50 Spring Branch, 1 link wide, runs N W. 8 ft. lower than Sp cor.

Thence along bluff on S. side of branch

13.40 Same branch 6 links wide, runs S.

16.00 Ravine course S E. ascend (heavy timber)

30.00 Top of hill - and descend

40.00 Set a hard sand stone, 16 x 13 x 4 ins - 11 ins in the ground for 1/4 sec cor. marked 1/4 on N face dug pits 18 x 18 x 17 ins E and W. of stone 5 1/2 ft Dist and raised a mound of earth 1 1/2 ft high, 3 1/2 ft base alongside, from which

An Oak, 14 ins diam. bears N. 13 1/2 E. 60 lks dist marked 1/4 S. B.T.

An Oak 18 ins. diam, bears S 27 1/2 W. 56 lks dist, marked 1/4 S. B.T.

41.35 Ravine course S. 8 ft lower than Cor.

60.55 Gulch course S E.

65.00 Top of hill - descend 50 ft

68.50 Enter valley, bears N W. and S E.

Over level valley, scattering brush and trees

80.00 Set a sand stone, 18 x 12 x 4 ins - 17 ins in the

Exterior Boundaries T 33 N R 14 W Continued

Chains | ground for Cor. to Secs. 1, 2, 35, and 36, marked 1 notch on E. and 5 notches on W. edges, and 6 notches on S. face, dug pits 18x18x12 ins in each sec. 5 ft dist and raised a mound of earth 2 ft high, 4 ft base alongside
From which
A Cottonwood, 16 ins diam, bears N. 1° W. 95 links dist, marked T. 34 N. R 14 W. S 35. B. T.
A Cottonwood 14 ins diam, bears N 27° E. 113 lks dist marked – T 34 N R 14 W S 36. B. T.
Land rolling and broken
Soil – In bluffs Clay 3rd rate farm land
In Valley dark clay and sandy loam 1st rate land
Stone – on point of the bluffs N.E. from the 1/4 sec cor. is soft and rock – worthless
Timber, along the Spring Branch on E. 13 chs. is a fine body of basswood and Oak timber, In the ravine at 41.35 chs there is also some Oak timber, In the Valley a few Cottonwood trees.

West, on a true line bet. Secs. 2 and 35.
Va 17° 26' E
Through Willow brush
5.85 Intersect the left bank of Niobrara River,
Set a hard sand stone, 14x8x5 ins – 9 ins in the ground for meander corner to fractional Secs. 2 and 35, marked M.C. on W. face dug a pit 36 ins square 1 ft deep 8 links E of stone and raised a mound of Earth 2 ft high, 4 ft base alongside, from which
A Cottonwood 10 ins diam, bears S 43½° E 87 lks dist marked M.C. B.T. T 33 N. R 14 W. S 2.
A Cottonwood, 10 ins diam bears N 76½° E 98 lks dist. marked M.C. B.T. T. 34 N R 14 W. S. 35
Land level
Soil Sandy. 3rd rate
Timber – Willow brush and a few Cottonwood trees

Sept 12 1840

2.55 chs is through timber and brush, of these lines

Exterior Boundaries T 33 N R 14 W. Cont'd

Latitudes Departures and Closing Errors

Line designated as	True bearing	Distance	Latitude N	Latitude S	Departure E	Departure W
N. Boundary	East	85.85			85.85	
E. Boundary	South	95.00		95.00		
S. Boundary	Meander	144.05	95.02			85.92
			95.02	95.00	85.85	85.92
	Totals.		95.00			85.85
	Errors in Latitude		.02	Departure		.07

General Description

This fractional Tp lies wholly in fractional Secs. 1, 2, and 12.
A narrow Valley lies between the foot of the bluffs and the river and is clay and sandy soil 2nd and 3rd rate
The hills are rough and broken, clay soil 3rd rate farm land but good grazing land.
There is Willow brush and white willow and Cottonwood along the Valley and basswood and Oak in some of the gulches generally high up in the bluffs at their heads.

Note. The above line was run after the N and W boundaries of T 34 Same Range were run.

Exterior Boundaries T. 34 N R 14 W.

Survey commenced. Sept 11 1890, with Burt's improved Solar Compass, made by Wm J. Young of Phila Penn, and numbered 4432, in perfect adjustment

Before dark at my camp I prepared to observe Polaris by driving a picket 4 chains South of the Cor. to Tps. 34 and 35 N. Rs 13 and 14 W. on line, bet secs. 1 and 6. I observe Polaris at 8h 12 m. by my watch, which is 2 m fast by comparison with solar compass at 2 P.M. this afternoon

The magnetic bearing of the Star is N. 10° 48' W.

Latitude 42° 57' N Long. 98° 54' W.

Astronomical time by Watch Sept 11		8h	12 m
Watch fast			2 m
Correct mean local time of obs Sept 11		8	10
Local mean time of UC of Polaris Tab 11			
Sept 15	13 38,6	13	58.2
Reduction for 5 days (add)	19.6		
Which taken from time of obs leaves the hour Angle of Polaris		18	11.8
Subtract from		23	56
Argument for Tab. II		5	44.2
Azimuth of Polaris for Lat 43° Tab 11		1°	45' E
North end of Needle is		10°	48° E
The sum is the Variation		12°	33' E

I lay off azimuth to the West 1° 45' and drive a picket 3 chs North on the line thus established to mark the true meridian

Sept 11 1890

At 6 A.M. Sept 12 the magnetic bearing of the true meridian established last night is N 12° 35' W. which corrected by table on page 55 of printed Manual of instructions gives 12° 33' E. for mean declination.

A flag set on cor. to Tps 34 and 35 N Rs 13 and 14 W is on the line of the true meridian

From the Cor. to Tps. 34 and 35 N Rs 13 and 14 W. which is a Stone firmly set and properly marked and witnessed, as hereinbefore described on page 62 of Notes of Survey of Exterior boundaries of Tp 34 N R 13 W.

Exterior Boundaries T 34 N R 14 W continued

I run West on a true line, bet. Secs. 1 and 36
Va 12° 35' E.

Through brush

5.80 Ponca Creek, running water 20 lks wide 6 ins deep runs N E. banks are 8 ft high and 1.50 chs across at top of bank

10.00 Leave brush

17.00 Enter foot hills or South slope of bluffs bears N E and S W.

19.00 Top of ridge of South slope 20 ft high

40.00 Foot of bluffs and enter valley, bears N W, and S E.
Set a hard sand stone 13×12×6 ins, 8 ins in the ground for 1/4 sec. cor. marked 1/4 on N face, dug pits 18×18×12 ins. E. and W. of stone 5 1/2 ft dist and raised a mound of earth 1 1/2 ft high 3 1/2 ft base alongside

Over gently descending valley

80.00 Set a hard sand stone, 20×12×5 ins, 15 ins in the ground for cor to secs. 1, 2, 35 and 36, marked 1 notch on E. and 5 notches on W. edges and 6 notches on S. face, dug pits, 18×18×12 ins in each sec. 5 1/2 ft dist and raised a mound of earth 2 ft high 4 1/2 ft base alongside

Land level and rolling

Soil in valley - dark clay loam 1st rate, along gradual sloping bluffs clay loam 1st rate

Timber - willow, plum and cherry brush along creek and boxelder, cottonwood and willow trees

West on a true line bet secs. 2 and 35
Va 12° 35' E.

Over level valley

3.20 Ponca creek, runs S E. water 6 ins deep thence up Cr to

16.20 Leave creek, water 6 ins deep runs S E. to line brush along creek

22.00 Leave valley and ascend steep bluff 50 ft high, bluffs bears N W. and S E.

25.25 Top of flat point of bluffs

40.00 Set a hard sand stone, 16×10×4 ins - 11 ins in the ground for 1/4 sec. cor. marked 1/4 on N face dug pits 18×18×12 ins. E and W. of stone 5 1/2 ft dist and raised a mound of earth 1 1/2 ft high 3 1/2 ft base alongside

Exterior Boundaries T. 34 N R 14 W Continued

Chains	
	Along North Edge of table land
66.00	Gravelly ravine course N. 10 ft deep
78.00	Descend sandy and gravelly slope 10 ft to
80.00	Set a hard sand stone 15×10×5 ins – 10 ins in the ground for Cor to Secs. 2, 3, 34 and 35, marked, 2 notches on E and 4 notches on W. edges and 6 notches on S. face dug pits 18×18×12 ins in each sec. 5½ ft dist and raised a mound of earth 2 ft high, 4½ ft base alongside
	Land – level and rolling
	Soil in valley clay loam 1st rate
	Table land mixed, sandy, gravelly and clay 3rd rate
	Timber. plum and willow brush, Willow Cottonwood and Elm trees along creek,

At 7 A.M. local attraction has increased 2'

West on a true line bet Secs. 3, and 34

Va. 12° 37' E

	Over gravelly ridges. North of N. edge of table land
	Descend 5 ft to
1.00	Ravine – ascend
4.50	Top of ridge
9.00	Ravine course N.W.
19.00	Enter valley of Ponca Creek. bears N.E. and S.W.
	Over level valley
40.00	Set a hard sand stone, 14×12×4 ins – 9 ins in the ground for ¼ sec. cor. marked ¼ on N. face dug pits 18×18×12 ins E. and W. of stone 5½ ft dist. and raised a mound of earth 1½ ft high, 3½ ft base alongside
58.80	Ravine 10 ft deep. Course N.
62.00	Leave valley and ascend bluffs, bears N. and S.
80.00	On top of bluffs. Set a hard sand stone, 18×10×7 ins 12 ins in the ground for Cor. to Secs. 3, 4, 33 and 34 marked 3 notches on E. and W. edges and 6 notches on S. face, dug pits 18×18×12 ins in each sec. 5½ ft dist. and raised a mound of earth 2 ft high 4½ ft base alongside,
	Land – rolling and level
	Soil – E – 19 chs rolling and gravelly 3rd rate

Exterior Boundaries T. 34 N. R 14 W. Continued.

Chains	
	Valley black clay loam 1st rate
	W 18 chs. sloping bluffs 2nd rate
	No timber on line excepting a few trees along the ravine at 58.80 for about 10 chs East of this point.
	Ponca Creek runs East about 2 chs North of line

West on a true line bet Secs. 4 and 33

Va. 12° 37' E.

	Over rolling table land
36.00	W. side of table and descend
40.00	Set a hard sand stone 16×10×5 ins – 11 ins in the ground for ¼ sec. cor. marked ¼ on N face. dug pits 18×18×12 ins E. and W. of stone 5½ ft dist and raised a mound of earth 1½ ft high 3½ ft base alongside
45.00	Ravine, course N.W.
53.00	Dry creek course N. water in holes
58.90	Short Ravine – course S.E. ascend
61.00	Top of bluffs – thence
	Over undulating smooth table land
80.00	Set a hard sand stone. 16×12×8 ins – 11 ins in the ground for Cor. to Secs. 4, 5, 32 and 33, marked – with 4 notches on E. and 2 notches on W. edges, and 6 notches on S. face, dug pits 18×18×12 ins. in each sec, 5½ ft dist and raised a mound of earth 2 ft high 4½ ft base alongside
	Land undulating and rolling
	Soil – broken land – Clay, 3d rate farm land
	Smooth table land 1st rate clay soil
	No timber, Sand stone Buttes in N.W. Sec. 4

At 8 A.M. Local attraction has increased 2 a 0

West on a true line bet. Secs. 5 and 32

Va 12° 37' E.

	Over gently rolling table land
40.00	Set a hard sand stone 18×10×4 ins – 12 ins in the ground for ¼ sec. cor. marked ¼ on N face, dug pits 18×18×12 ins. E and W. of stone 5½ ft dist and raised a mound of earth 1½ ft high 3½ ft base alongside
60.00	W. side of table land descend
63.50	Ravine course N.W.

Exterior Boundaries T 34 N R 14 W Cont'd

78.40 A Dry Creek, Course N. and
Enter valley bears N. and S.
80.00 Set a hard Sand Stone, 18+12+6 ins, 12 ins in the ground for Cor. to Secs. 5, 6, 31 and 32, marked with 5 notches on E and 1 notch on N. Edges, and 6 Notches on S. face, dug pits 18+18+12 ins in each Sec. 5½ ft dish and raised a mound of earth 2 ft high 4½ ft base along side.
Land rolling
Soil – Table lands, 1st rate clay loam
Valley, black soil 1st rate, hills 2nd rate
No timber
There is a Stone Butte about half a mile south on each side of the dry Creek

At 8.30 a m Local Attraction has increased Va 2° West on a true line bet Secs. 6 and 31

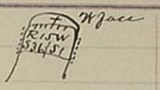
Va 17° 39' E.

Over level Valley
4.00 Leave valley and ascend hills bears N and S and ascend
23.70 Ravine Course N
32.15 Ravine Course N E
35.75 Ravine Course S E.
40.00 Set a hard Sand Stone, 16+9+4 ins – 11 ins in the ground for ¼ Sec Cor. marked ¼ on W face dug pits 18+18+12 ins E and W. of Stone. 5½ ft dish, and raised a mound of earth 1½ ft high 3½ ft base. alongside
47.00 Top of table land 10 ft above ¼ sec. cor.
Thence over level table land
78.65 Set a hard Sand Stone 33+15+6 ins. 24 ins in the ground for Cor. to Tps 34 and 35 N. Rs. 14 and 15 W – Marked T 34 N. on S. and T 35 N. on N. Edges R 14 W. at top. and below – S. 31 on N. and S. 6 on S side of E face below R 15 W at top. and below – S 36 on N and S. 1 on S. side of W face, with 6 notches on each of the 4 sides and a + on top of Stone

Exterior Boundaries T 34 N. R 14 W. Continued

Chains

diagram of description



dug pits 24+18+12 ins. lengthwise on each line N. S. E and W. of Stone 6 ft dist and raised a mound of earth 2½ ft high 5 ft base alongside
Note – Convergency for 12 miles. 1.35 chs allowed as per Table IX.
Land level and rolling
Soil – Valley and table land dark clay loam 1st rate. Hills Clay 3rd rate farm land
No timber
Stone. There is a sand Stone butte in N 2/3 Sec 6.

At 9.30 a m Sept 17 I set my Compass over the Center of the corner to Tps 34 and 35 N. Rs 14 and 15 W. above described and adjusted it to a true meridian by the Solar Apparatus. The Magnetic bearing of the true meridian so determined I find to be N 17° 38' W. which corrected by table on page 55 of manual of instructions gives for mean declination, 17° 36' E.
Thence I run
South bet. secs 1 and 6

Va 17° 38' E

Over smooth gently rolling prairie
39.50 Ravine – 10 ft deep Course S.E. ascend
40.00 Set a hard Sand Stone 16+12+4 ins. 11 ins in the ground for ¼ sec. cor. marked ¼ on W face. dug pits 18+18+12 ins. N. and S. of stone. 5½ ft dish and raised a mound of earth 1½ ft high 3½ ft base alongside
40.50 Top of bank 6 ft above corner
68.00 Ravine course S E. 15 ft deep
76.00 Ravine course S W. and
Enter valley bears E. and N.
80.00 Set a hard Sand Stone 16+16+7 ins – 11 ins in the ground for Cor. to Secs. 1, 6, 7 and 12, Marked 1 Notch on N and 5 Notches on S. edges and 6 notches on E face. dug pits 18+18+12 ins in each sec 5½ ft dish and raised a mound of earth 2 ft high 4½ ft base alongside
Land rolling

Exterior Boundaries T 34 N R 14 W Continued

Chains Soil N² dark clay loam 1st rate S² 2nd rate
No timber

South bet Secs. 7 and 12
Va 12° 38' E
Over gently rolling descending ground
.60 A dry creek course N E. and
Leave valley bears E. and W. and ascend
Steep bank 15 ft high
2.60 Top of bank
40.00 Set a hard sand stone, 16×10×8 ins – 11 ins. in the ground for 1/4 sec cor. marked 1/4 on W. face dug pits 18×18×12 ins N and S. of stone 5½ ft dist. and raised a mound of earth 1½ ft high 3½ ft base alongside
55.90 Divide Road bears N W. and S E.
68.95 A point 7.42 chains East of stone flag. on the summit of S E. peak of Twin Buttes
80.00 Set a hard sand stone 18×12×6 ins – 12 ins in the ground for cor. to Secs. 13, 18, 19 and 24, marked 2 notches on N. and 4 notches on S edges and 6 notches on E. face, dug pits, 18×18×12 ins, in each sec. 5½ ft dist. and raised a mound of earth 2 ft high 4½ ft base, alongside from which
7 12 13 & 18
The stone monument on summit of S E. peak of Twin Butts bears N 33½° W. 13.25 chs dist
Land gently rolling N 55 chs N. slope
Soil – N 55 chs. dark clay loam 1st rate
S 25 chs Sandy 3rd rate
Stone – along S 20 chs are scattering boulders which have rolled from summit of Butte the stone is calcarious stone and worthless
No timber

At 10.45 a.m. diurnal change has diminished Va. 2'
South bet Secs. 13 and 18
Va 12° 36' E.
Over rolling descending ground
16.00 Leave Valley and enter broken land
Descend

Exterior Boundaries T 34 N R 14 W. Continued

Chains
27.00 Ravine 50 ft deep course S E.
Ascend
40.00 Set a hard sand stone 16×10×6 ins – 11 ins in the ground for 1/4 sec cor. marked 1/4 on W. face, dug pits 18×18×12 ins N. and S. of stone 5½ ft dist and raised a mound of Earth 1½ ft high 3½ ft base alongside
50.00 Top of ridge
77.95 Ravine course S E.
80.00 Set a sand stone, 15×10×5 ins – 10 ins in the ground for cor. to Secs. 13, 18, 19 and 24 marked with 3 notches on the N. and S. edges, and 6 notches on E face dug pits 18×18×12 ins in each sec, 5½ ft dist and raised a mound of earth 2 ft high 4½ ft base alongside.
Land rolling and broken
Soil clay and sandy, 3rd rate farm land good grazing land
No timber.

South bet. Secs. 19 and 24
Va 12° 36' E.
Over rolling ground
34.00 Enter Valley, bears E. and W.
Over level valley
40.00 Set a hard sand stone, 16×12×4 ins – 11 ins, in the ground for 1/4 sec cor. marked 1/4 on W face. dug pits 18×18×12 ins N. and S. of stone 5½ ft dist and raised a mound of earth 1½ ft high 3½ ft base, alongside
55.00 Enter Willow brush
57.45 Intersect the left bank of Keya Paha River bank 3 ft high and sandy
Set a hard sand stone 18×7×4 ins – 12 ins, in the ground for meander cor. to fractional secs. 19 and 24 – marked M.C. on S. face. dug a pit 36 ins. square 1 ft deep 8 links N. of stone and raised a mound of earth 2 ft high 4½ ft base alongside. No trees large enough for bearing trees within limits
Land level and rolling
Soil – Valley clay and sandy 1st and 2d rate, hills clay 2d rate
Timber – Willow and plum brush along river bank

Exterior Boundaries T 34 N. R 14 W. Continued

Chains

To connect the above meander Cor. with that of Surveys on the right bank of the river, I go to the Cor. to Secs. 19, 24, 25 and 30, bet Rs 14 and 15 W. The variation at which the line was run was. 13° 55' E and distance to the meander Cor. on river bank 22.30 chs. according to the notes furnished by the General Land Office

I allow for diminished Va for 18 yrs 1° 12'
Which leaves for present Va 12 43' E

I run
North bet Secs 19 and 24 from the above mentioned Cor.

Va 12°. 43' E

And at 20.50 chs intersect the right bank of Keya Paha River, where I am unable to find any evidence of meander Cor. or bearing trees described in the original notes, 180 chs of the river bank has therefore been washed away by the River since M.C. was established.

I extend the line North (same Va) to 31.04 chs a point 13.64 chs W. of the Meander Cor on left bank of Keya Paha River. The excess according to the above Measurements is as follows.

Distance to M.C.	N of River	57.45 chs
Distance to M.C	S. of River	31.04 "
Total		88.49 chs
Subtract		80.00 "
Excess		8.49 chs

The difference in departures. 13.64 chs

Sept 12 1890

At 12 m. at M.C. I observed Latitude and found it to be 42° 54' N

Exterior Boundaries T 34 N R 14 W Cont'd

Latitudes Departures and Closing Errors

	True Bearing	Distance	Latitudes N	Latitudes S	Departures E	Departures W
W. boundary	North	297.45	297.45			
N boundary	East	478.65			478.65	
E boundary	South	480.00		480.00		
S. boundary	West	85.85				85.85
N. Meanders		451.90	231.70	43.66		393.37
Convergency 3½ Miles					38	
			529.15	523.66	479.03	479.22
Totals			523.66			479.03
Error in Latitude			.49	Error in Departure		.19

General Description

The surface of this Township is Varied, being rolling tableland, high South sloping bluffs and Narrow Valley

Ponca Creek Waters the Township in the North East part. The Valley is narrow, clay loam and 1st rate.

The Niobrara Valley is Narrow, clay and sandy loam and is generally 2nd and 3rd rate

The tableland is clay soil

There is Willow, Cottonwood and Oak along the Ponca. And Willow and Cottonwood along the Niobrara River

There are a few settlers in the Township

Exterior Boundaries T 34 N. R 15 W.

Chains

Survey commenced Sept 22 1890, with Burt's improved Solar Compass made by Wm. J. Young of Phila Pat. and numbered no 33, in perfect adjustment

At 2 P.M. I set my compass over the center of the Cor. to Tps 34 and 35 N. Rs. 14 and 15 W. which is a stone firmly set and properly marked and witnessed as hereinbefore described, on page 76 of Notes of Survey of Exterior boundaries of Tp 34 N R 14 W. and adjust it to a true meridian, by the Solar Apparatus. The Magnetic bearing of the true meridian so determined I find to be N 12°. 33' W. which corrected by the table on pg 56 of the Manual of instructions gives for local mean declination 12° 36' E.

I take a backsight to the South and observe that a flag on the line bet. secs. 1 and 6, is on the true meridian

From the above mentioned corner I run

West on a true line bet. secs. 1 and 36.

Va. 12° 33' E.

Over gently rolling ground, ascending

40.00 On top of elevation 10 ft higher than last Cor.

Set a hard sand stone, 16×14×4 ins – 11 ins in the ground for 1/4 sec. cor. marked 1/4 on N face, dug pits 18×18×12 ins. E and W. of stone 5 ft dia and raised a mound of earth 1½ ft high 3½ ft base alongside

Gradual descent

80.00 Set a hard sand stone, 18×10×6 ins, 12 ins in the ground for Cor. to secs. 1, 2, 35, and 36, marked – with 1 notch on the E. and 5 notches on W. edges, and 6 notches on S. face, dug pits 18×18×12 ins. in each sec. 5 ft dia and raised a mound of earth 3 ft high, 4½ ft base alongside

Land gently rolling – gradual slope E and W. from the 1/4 Sec. Cor.

Soil – dark clay loam 1st rate

No Timber

West on a true line bet secs. 2 and 35

Va. 12° 33' E.

Over gently rolling ground, smooth surface

Exterior Boundaries T 34 N R 15 W Cont'd

Chains

11.80 Road bears N E and S W.

20.30 Shallow drain 1½ ft deep Course S E.

40.00 Set a hard sand stone 16×10×4 ins – 11 ins in the ground for 1/4 sec cor. marked 1/4 on N face, dug pits 18×18×12 ins. E. and W. from stone 5½ ft dia and raised a mound of earth 1½ ft high 3½ ft base alongside

47.50 Shallow drain 3 ft deep Course S.

80.00 Set a hard sand stone 18×12×4 ins – 17 ins in the ground for Cor. to secs. 2, 3, 34 and 35, marked with 2 notches on E and 4 notches on W. edge, and 6 notches on S face, dug pits 18×18×12 ins. in each sec 5½ ft dia and raised a mound of earth 3 ft high and 4½ ft base alongside

Land gently rolling

Soil dark clay loam 1st rate

No timber

West on a true line bet. secs 3 and 34

Va 12° 33' E

Over gently rolling ground

40.00 Set a hard sand stone, 12×12×4 ins – 8 ins in the ground for 1/4 Sec. Cor. marked 1/4 on N face, dug pits 18×18×12 ins E. and W. from stone 5½ ft dia and raised a mound of earth 1½ ft high 3½ ft base alongside

47.60 Drain 3 ft deep Course S W.

74.37 Divide Road bears N and S E.

Descend 8 ft to

77.00 Enter alkali flat, bears N. and S.

80.00 Set a hard sand stone 18×10×4 ins, – 12 ins in the ground for Cor. to secs. 3, 4, 33 and 34 marked with 3 notches on E and W. edges, and 6 notches on S. face, dug pits 18×18×12 ins. in each sec 5½ ft dia and raised a mound of earth 2 ft high 4½ ft base alongside

Land gently rolling

Soil – dark clay loam 1st rate

No timber

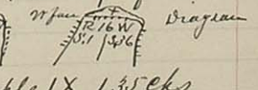
West on a true line bet. secs 4 and 33

Va 12° 33' E

Chains Over flat land
6.00 Leave Alkali flat. bears N and S
Ascend
10.00 Enter undulating Prairie
29.50 Ravine. Course S.E. 15 ft deep
40.00 Set a hard Sand Stone, 16 x 10 x 4 ins - 11 ins in the ground for 1/4 Sec. Cor. marked 1/4 on N. face dug pits 18 x 18 x 12 ins E. and W. of Stone 5 1/2 ft disk and raised a mound of earth 1 1/2 ft high 3 1/2 ft base, alongside
80.00 Set a hard Sand Stone, 15 x 10 x 4 ins - 10 ins in the ground for Cor. to Secs. 4, 5, 32 and 33, marked with 4 notches on E and 2 notches on W. edge and 6 notches on S. face. dug pits 18 x 18 x 12 ins in each Sec. 5 1/2 ft disk, and raised a mound of earth 2 ft high 4 1/2 ft base alongside
Land undulating or gently rolling
Soil dark Clay loam 1st rate
No timber
There is a Spring about 3 chs S of sec. cor. on N side of a Spring Slough.
There is a deserted Sod house about the same distance to the N.E.

West on a true line bet. Secs. 5 and 32
Va. 17° 33' E
Over descending ground
8.00 Ravine, 4 ft deep Course S.E. water below the line
Ascend over gradually rising ground
37.10 Shallow drain Course S.E. 3 ft deep
40.00 Set a hard Sand Stone, 16 x 12 x 3 ins - 11 ins in the ground for 1/4 Sec. Cor. marked 1/4 on N. face dug pits 18 x 18 x 12 ins E and W. of stone 5 1/2 ft disk and raised a mound of earth 1 1/2 ft high 3 1/2 ft base alongside
Ascend gradual E slope of low Bluffs
78.00 Sandy ravine 4 ft deep Course S.E.
78.90 Same ravine. Course N.E.
80.00 Set a hard Sand Stone, 18 x 10 x 4 ins - 12 ins in the ground for Cor. to Secs. 5, 6, 31 and 32. marked with 5 notches on E and 1 notch on W. edge

Chains
and 6 notches on S. face. dug pits 18 x 18 x 12 ins in each Sec. 5 1/2 ft disk and raised a mound of earth 2 ft high 4 1/2 ft base alongside
Land E^r undulating. W^r rolling
Soil E, 60 chs dark clay loam 1st rate
W 20 chs Sandy 2nd and 3rd rate
No timber, except a few white willows along the ravine S.E. of Sec. cor.

At 4.30 P.M. diurnal change has increased Va 2'
West on a true line bet. Secs. 6 and 31
Va. 17° 35' E.
Over ascending ground
1.30 Same ravine Course S.E.
29.00 Top of gravelly ridge. bears N.W. and S.E.
Descend
36.20 Ravine Course S.E. 5 ft deep
Ascend
40.00 Set a hard Sand Stone, 16 x 10 x 4 ins - 11 ins in the ground for 1/4 Sec. Cor. marked 1/4 on N. face dug pits 18 x 18 x 12 ins E. and W. of stone 5 1/2 ft. disk and raised a mound of earth 1 1/2 ft high 3 1/2 ft base alongside
44.00 Enter Table Land
60.00 Begin descent of bluffs. bears N.W. and S.E.
78.55 Drain Course S.W.
78.65 On sloping bank of drain.
Set a hard Sand Stone 30 x 22 x 5 ins. 22 ins. in the ground for Cor. to Tps 34 and 35 N. Rs 15 and 16 W. marked
T 34 N. on S.
T 35 N on N edges
R 15 W on E at top with S. 31 and S. 6 on N. and S. sides of E. face below
R 16 W. at top. with S. 36 and S. 1. on N and S. sides of W. face. below. 6 notches on N. and S. edges and on E and W faces. cut a + on top of stone
dug pits 24 x 18 x 12 ins length wise on each line N. S. E. & W of Stone 6 ft disk and raised a mound of earth 2 1/2 ft high 5 ft base alongside
Diagram


Convergency allowed as per table 1 X 1.35 chs
Land rolling. Soil Sandy and gravelly 4th rate

Exterior Boundaries T. 34 N R 15 W. Cont'd

Chains Note The above corner stands on sloping W bank of a shallow ravine. The S E. and S W. pits are in the bottom of the flat hard clay drain along which grows good blue joint grass The surface has a gentle slope to the S W. and it is uncertain where the location of the foot of the bluffs is. I therefore assume the entrance to the low table land to be this point.
No timber

At 5 P.M. I set my compass over the Cor. to Tps 34 and 35 N. Rs 15 and 16 W and adjust it to a true meridian by the solar apparatus The magnetic bearing of the true meridian so determined is N 12° 36' W and the variation is 12° 36' E.
Thence I run
South. bet. secs. 1 and 6
Va 12° 36' E
Over undulating and gently descending ground
.10 Center of same drain, course S W. 1 ft lower, than Cor
21.50 Ravine Course W. 5 ft. deep
40.00 Set a hard sand stone, 18 × 8 × 4 ins. - 12 ins. in the ground for 1/4 sec. Cor. marked 1/4 on W. face, dug pits 18 × 18 × 12 ins. N. and S. of stone 5 1/2 ft dist and raised a mound of earth 1 1/2 ft high 3 1/2 ft base alongside
52.00 Ravine or Spring bog. 1 ch wide. heads about 2.50 chs East of line in numerous springs
80.00 Set a hard sand stone, 20 × 8 × 3 ins - 15 ins in the ground for Cor. to secs. 1. 6. 7 and 12. marked with 1 notch on N. and 5 notches on S edges and 6 notches on E. face - dug pits 18 × 18 × 12 ins in each sec. 5 1/2 ft dist and raised a mound of earth 2 ft high 4 1/2 ft base alongside
Land undulating gentle S slope
Soil Clay loam 1st rate
No timber

September 22 1890

At 7 am. Sept 23rd I adjust my compass to a

Exterior Boundaries, T 34 N R 15 W Continued

Chains true meridian, which agrees with the line established last night, which I determined by taking a back sight on the 1/4 sec. Cor. bet sec. 1 and 6.
The magnetic bearing of the line is N 12° 39' W and the Va. is 12° 39' E
Thence I run
South bet. secs. 7 and 12
Va 12° 39' E.
Over undulating ground.
40.00 Set a hard sand stone, 16 × 10 × 4 ins, - 11 ins in the ground for 1/4 sec. Cor. marked 1/4 on W. face, dug pits 18 × 18 × 12 ins N and S. of stone 5 1/2 ft dist. and raised a mound of earth 1 1/2 ft high 3 1/2 ft base alongside.
56.80 Ravine, course W.
Ascend
73.75 Top of hill
80.00 Set a hard sand stone 15 × 14 × 3 ins, - 10 ins, in the ground for Cor. to secs. 7. 12. 13 and 18, - marked with 2 notches on N. and 4 notches on S edges and 6 notches on E. face. dug pits 18 × 18 × 12 ins in each sec. 5 1/2 ft. dist. and raised a mound of earth 2 ft high 4 1/2 ft base alongside
Land - gently rolling and broken
Soil - Clay loam 1st and 2d rate
No timber
About 1/2 mile west there is a stoney butte in sec 12

South bet. secs 13 and 18
Va 12° 39' E
Over descending ground
6.50 Ravine, course S E. to the line, 40 ft deep below top of hill
11.00 Enter ravine course to the line S W. 1.00 ch wide
Thence down ravine and at
15.00 Leave ravine course from line S W.
Over low foot hills of W. slope of bluffs
40.00 Set a hard sand stone 14 × 10 × 4 ins. 9 ins in the ground for 1/4 sec. Cor. marked 1/4 on W. face, dug pits 18 × 18 × 12 ins N. and S. of the stone 5 1/2 ft dist and raised a mound of earth 1 1/2 ft high. 3 1/2 ft. base alongside

Exterior Boundaries T 34 N. R 15 W Cont'd

Chains
58.60 A dry creek course S E. and enter
Valley bears N W. and S E.
Over undulating valley
70.00 Leave Valley and ascend hill bears E and W.
80.00 On N slope of hill 2/3 to top in prairie dog town
B Set a hard sand stone 14×10×4 ins – 9 ins in the ground for Cor. to Secs. 13, 18, 19 and 24 marked with 3 notches on N. and S. edges and 6 notches on E face, dug pits 18×18×12 ins in each sec. 5½ ft. dist and raised a mound of earth 2 ft high 4½ ft base alongside
Land rolling being along W. slope of hills East of ravine
Soil clay loam 2d rate and 3d rate land
Timber. There are a few small trees and bushes along the dry creek west of the line.

South bet. secs. 19 and 24
Va 12° 39' E
Ascending
2.00 Top of hill. 10 ft higher than Cor. and descend
14.00 ~~Foot of hill~~. Enter Valley, bears E and W.
Over level bottom
35.00 Enter brush
36.00 Intersect the left bank of Keya Paha River, bank 6 ft high, clay and sandy
Set a hard sand stone 15×12×3 ins – 10 ins in the ground for Meander Cor. to fractional secs. 19 and 24 – marked M.C. on S. face, dug a pit 36 ins square 1 ft deep 8 links dist and raised a mound of earth 2 ft high 4½ ft base alongside
Land level and rolling
Soil – on hills light clay 3d rate
Valley sandy and clay 2d rate
Timber – There is small willow brush around the M. C
River here is about 1.50 chs wide 1 ft deep
To connect the above Meander Corner with that of former surveys on the right bank of the river, I go to an Elm tree, marked ¼ S.

Exterior Boundaries T 34 N. R 15 W. Continued

B.T. 20 ins diam. from which I measure N 61½° E 110 links to find the ¼ sec cor. bet secs 19 and 24 Rs 15 and 16. as described in the notes of the original survey. I find no evidence of a corner I now run from said tree N 42° E. 70 links to a post in a mound of earth with pits N and S. there are no marks on the post. I conclude that this is the Original Govt. ¼ sec cor. The line bet. secs 19 and 24 was run at Va 14° 08' E. in 1872 and distance from the sec cor. to 19, 24, 25 and 30 to M. C. on river bank, 53.64 chs. I allow 1° 12' for difference of variation for 18 years and run
North bet Secs. 19 and 24
Va 12° 56' E
and at 52.80 chs (counting from the sec cor) intersect right bank of Keya Paha River, which taken from the original distance 53.64 leaves 84 links of river bank that has been cut away by the river. I am unable to find the M C. or any evidence of the bearing tree. I continue the line North to 54.43 chs to a point 13.27 chs West of the Meander cor. bet fractional secs. 19 and 24 on the left bank of the river.
The difference bet. the surveys according to the above measurements is Latitude 9.43 chs Depth 13.27 chs.

Sept 23 1890

E

Latitudes Departures and Closing Errors

Line designated as	True Bearings Distance	Latitudes N	Latitudes S	Departures E	Departures W
West boundary	North 276.00	276.00			
N. boundary	East 478.65			478.65	
E boundary	South 297.45		297.45		
S boundary	Meanders 660.69	188.98	167.67	5.26	484.85
Convergency	3½ M			.38	
		464.98	465.12	484.29	484.85
	Totals		464.98		484.29
	Errors in Latitude		.14		
	Errors in Departure				.56

Exterior Boundaries T 34 N. R 15 W. Continued

General Description

The land of this Township is table land South sloping bluffs and river valley

The table land is gently rolling clay and sandy loam

The bluffs have a slope of nearly a mile from the summit of the divide or table land to the narrow valley along the river. the soil is generally clay

The valley is narrow, clay and sandy land

The river bank is lined with Willow brush and small cottonwood

There is a good growth of buffalo grass and short blue joint

Along the west tier of secs in this Range the hills begin sloping to the west and S.W. and form along the range line a level plain, which extends across the next range, surrounded on the North by a long circular line of smooth South sloping bluffs in Tp 35

I have not seen any stone suitable for corners in this Tp and will have to depend on the quarries in Tp 34 R 14

The corners on Tp lines just established were procured from the butte in Sec 6 of that Tp

Exterior Boundaries T 34 N. R 16 W

Chains. Survey commenced October 1st 1890 with a Burts improved Solar Compass made by Wm J. Young of Phila. Penn, and numbered 4437 in perfect adjustment

At the Cor. to Tps 34 and 35 N Rs 15 and 16 W in Latitude 47° 57' N Long 99° 08' W

I observed Polaris at 7h 30m by my watch which I adjusted to agree with Solar Compass this afternoon at 4 P.M.

I find the magnetic bearing of the ~~true~~ star to be N 10° 56' E I drive a picket S 12° 37½' 3 chs distant

Astronomical mean time by watch Oct 1	7h	30m
Local mean time U.C. of Polaris Oct 1.	12	35.7
Reduction 1 day (add)		3.9
Local M.T. U.C. of Polaris Sept 30	12	39.6
Which taken from time of obs leaves hour angle	18	50.4
Subtract from	23	56.1
Argument for Tab II	5	05.6
Azimuth	1°	41' E
North end of Needle	10°	56' E
The sum is the Variation	12°	37' E

I lay off Azimuth 1° 41' to the West. and drive a picket 3 chs South 12° 35' E.

Oct 1 1890

At 7 o'clock A.M. Oct 2 I find the magnetic bearing of the line established last night to be 12° 37' E and (by table on page 55 of the Manual) the mean declination is 12° 35' E.

I begin at the Cor to Tps 34 and 35 N Rs 15 and 16 W which is a stone firmly set and properly marked and witnessed as herein before described on page 85 of the Notes of Survey of Exterior boundaries of Tp 34 N R 15 W

Thence I run.

West on a true line bet. secs 1 and 36

Va 12° 37' E

Over gently descending ground

15.00 Over level prairie

39.00 Drain - Spring boy 6 chs wide course N.

Exterior Boundaries T 34 N R 16 W Cont'd

Chains

40.00 Set a hard sand stone 16×10×3½ ins – 11 ins in the ground for 1/4 sec Cor. marked 1/4 on N. face dug pits 18×18×12 ins E. and W. of stone 5½ ft dist. and raised a mound of earth 1½ ft high 3½ ft base alongside.

50.00 Ravine Course S.

68.80 Ravine Course S

73.50 Ravine Course S.E.

79.30 Ravine Course S E.

80.00 Set a hard sand stone 16×10×4 ins – 11 ins in the ground for Cor to secs. 1, 2, 35 and 36, marked with 1 notch on E and 5 notches on W edges and 6 notches on S. face, dug pits 18×18×12 ins in each sec 5½ ft dist and raised a mound of earth 2 ft high 4½ ft base alongside

Land gently undulating

Soil dark clay loam 1st rate

No. timber.

At 7.30 a m. local attraction has increased 2'

West on a true line bet Secs. 2 and 35

Va. 12° 39' E.

Over undulating ground

15.75 Ravine. Course S E.

27.00 Ravine Course S.

40.00 Set a hard sand stone 18×10×4 ins – 12 ins in the ground for 1/4 sec cor. marked 1/4 on N. face dug pits 18×18×12 ins. E and W of stone 5½ ft dist and raised a mound of earth 1½ ft high 3½ ft base alongside.

54.00 Spring bog, 2 chs wide course S. 4 ft deep

80.00 Set a hard sand stone 18×10×4 ins – 12 ins in the ground for Cor. to Secs. 2, 3, 34 and 35 marked with 2 notches on E and 4 notches on W. edges and 6 notches on S. face dug pits 18×18×12 ins in each sec 5½ ft dist and raised a mound of earth 2 ft high 4½ ft base alongside

Land level and rolling

Soil. very dry and hard clay and gravel 2nd rate

No timber. There is living water in S. bog at 54 chs

Exterior Boundaries T 34 N. R 16 W. Continued

Chains

West on a true line bet secs 3 and 34

Va 12° 39' E

Over gently rolling and ascending ground

40.00 Set a hard sand stone 20×10×4 ins – 15 ins in the ground for 1/4 sec. Cor. marked 1/4 of N. face, dug pits 18×18×12 ins. E and W. of stone 5½ ft dist and raised a mound of earth 1½ ft high 3½ ft base alongside

Over gently descending ground

80.00 Set a hard sand stone 18×10×4 ins – 12 ins in the ground for Cor. to secs. 3, 4, 33 and 34 marked with 3 notches on E and W. edges and 6 notches on S. face, dug pits 18×18×12 ins in each sec, 5½ ft dist and raised a mound of earth 2 ft high 4½ ft base alongside

Land, gentle E. and W. slope

Soil dry hard clay sand and gravel 3rd rate

No timber.

At 9. a m. local attraction has increased Va 3'

West on a true line bet Secs 4 and 33

Va 12° 42' E

Over rolling ground

18.00 Enter Valley bears N and S.

18.80 Creek 2 links wide runs S W. water clear and cold. A fine spring under each bank about 2 chs north

21.00 Leave Valley. Enter rolling land bears N and S.

40.00 Set a hard sand stone 15×12×4 ins – 10 ins in the ground for 1/4 sec. Cor. marked 1/4 on N face dug pits 18×18×12 ins. E and W of stone 5½ ft. dist and raised a mound of earth 1½ ft high 3½ ft base alongside

Ascending ground

78.00 Drain Course S E. 8 ft deep

80.00 Set a hard sand stone, 16×12×5 ins – 11 ins in the ground for Cor. to Secs. 4, 5, 32 and 33, marked with 4 notches on E and 2 notches on W edges and 6 notches on S. face, dug pits 18×18×12 ins in each sec, 5½ ft dist and raised a mound of earth 2 ft high 4½ ft base alongside.

Land rolling sandy and gravelly

Exterior Boundaries T 34 N R 16 W. Continued

Chains	
	Soil – mixed Clay, sand and gravel, very hard and dry upland the narrow valley is black soil 1st rate and produces fine grass.
	No timber along the line, a few white willow trees north of line along the Creek in Sec 33, a Settler in SE Sec 33 T 35 N
	West on a true line bet secs 5 and 32 Va 12° 42' E
	Over ascending ground
4.00	Top of low & sloping ridge Descend
16.50	Ravine course S 7 ft deep
26.00	Broad sandy ravine course SW. 4 ft deep
34.00	Ravine Course SW. 4 ft deep
40.00	Set a hard sand stone 15+17+5 ins – 10 ins in the ground for 1/4 Sec. Cor. Marked 1/4 on N. face dug pits 18+18+12 ins E. and W. of stone 5 ft disk and raised a mound of earth 1 ft high 3 ft base alongside
47.00	Drain Course S. 4 ft deep. Valley 3 chs wide ascend
80.00	Set a hard sand stone 16+17+4 ins – 11 ins in the ground for cor to Secs. 5, 6, 31 and 32 marked with 5 notches on E. and 1 notch on W. edge and 6 notches on S face dug pits 18+18+12 ins in each Sec, 5 ft disk and raised a mound of earth 2 ft high 4 ft base alongside
	Land gently rolling
	Soil mixed clay sand and gravel 2d rate.
	No timber.
	At 10 a.m. Local attraction has increased Va 3' West on a true line bet secs 6 + 31
	Va 12° 45' E
	Over rolling ground ascending
2.00	Top of gravelly ridge bears N W and S.E. Descend
26.50	Ravine 10 ft deep course S E Ascend
39.00	Drain Course S E. 8 ft deep

Exterior Boundaries T 34 N R 16 W Continued

Chains	
40.00	Set a hard sand stone 17+10+6 ins – 8 ins in the ground for 1/4 Sec. Cor. Marked 1/4 on N face, dug pits 18+18+12 ins E and W of stone 5 1/2 ft dist, and raised a mound of earth 1 1/2 ft high 3 1/2 ft base alongside
	Ascending
55.00	Top of gravelly ridge bears NW and SE, descend
72.00	Enter drain course to line S W. Thence down drain to
77.50	Leave drain, course SW from the line 4 ft deep gentle ascent
78.65	Set a hard sand stone 17+15+6 ins – 17 ins in the ground for cor to Twps 34 and 35 N Rs. 16 and 17 W. marked T 34 N. on S and T 35 N on N edges R 16 W at top and below S 31 and S 6 on the N and S. sides of E face. R 17 W at top below S 36. and S. 1 on the N and S sides of W face. 6 notches on N and S edges and E and W. edges. – Cut out on top of stone dug pits 24+18+12 ins lengthwise on each line N.S. E and W. of stone 6 ft disk and raised a mound of earth 2 1/2 ft high 5 ft base alongside. From which A hackberry 12 ins in diam bears N 75° 35' E 175 links dist. Marked T 35 N R 16 W. S 31. B.T.
	Note The above corner stands near the foot of a steep ridge 10 ft high above the corner
	Land rolling
	Soil sandy and gravelly 4th rate
	There are a few Cottonwood trees down the drain but no others within the limits other than the one above mentioned.
	2nd Guide Meridian W. T. 34 N., Rs 16 + 17 W. 2nd G.M.W.
	At 10.30 a.m. I set my Compass over the center of the corner to Tps 34 and 35 N. Rs. 16 and 17 W and adjusted it to a true meridian by the Solar Apparatus.
	The magnetic bearing of the true Meridian I found to be N 12° 46' W. which corrected by the Manual of Instructions gives for Mean declination

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2nd Guide Meridian W. T. 34 N. Rs 16 & 17 W.

Exterior Boundaries T 34 N R 16 W Continued

Chains 12° 47' E

Thence I run

South bet Secs. 1 and 6

Va 12° 45' E.

Over sandy rolling ground – descend

7.50 Sandy ravine course S W.

40.00 Set a hard Sand Stone 14×10×4 ins – 9 ins. in the ground for 1/4 Sec. Cor. marked 1/4 on W face dug pits 18×18×12 ins. N and S of stone 5½ ft disk and raised a mound of earth 1½ ft high 3½ ft base alongside

80.00 Set a hard Sand Stone 20×10×4 ins – 15 ins in the ground for Cor to Secs. 1, 6, 7 and 12 marked with 1 notch on N and 5 notches on S. edges and 6 notches on E. face. dug pits 18×18×12 ins in each sec. 5½ ft. disk and raised a mound of earth 2 ft high 4½ ft base alongside

Land rolling

Soil, sandy and gravelly 3rd rate

No timber

South bet. Secs. 7 and 12.

Va 12° 45' E

Over undulating ground

6.00 Descend

11.00 Spring bog course S W.

27.50 Spring Branch 1 link wide runs W.

38.50 Ravine course W.

Ascend

40.00 Set a hard Sand Stone 18×10×3 ins – 12 ins in the ground for 1/4 Sec Cor. marked 1/4 on W face. dug pits 18×18×12 ins. N and S of stone 5½ ft disk and raised a mound of earth 1½ ft high 3½ ft base alongside

50.50 Top of sharp round gravelly peak or Butte

Descend along E side of ridge

71.70 Small drain course E. 2 ft deep

77.50 Small drain 2 ft deep course E.

80.00 Set a hard Sand Stone 16×10×4 ins – 11 ins in the ground for Cor to Secs. 7, 12, 13 and 18. marked with 2 notches on N and 4 notches on S Edges

Exterior Boundaries T 34 N. R 16 W continued

and 6 notches on E face. dug pits 18×18×12 ins in each sec. 5½ ft. disk and raised a mound of earth 2 ft high 4½ ft base alongside. On E slope of steep ridge.

Land rolling and broken

Soil. Clay sandy and gravelly. 3rd rate

Oak bushes bet 20 and 45 chs.

South bet. Secs. 13 and 18.

Va 12° 45' E

Over rolling and broken ground – descend

13.50 Ravine, course W. 50 ft deeper than Cor.

Ascend

34.00 Top of hill or ridge – bears E and W.

Descend

39.00 Small drain, course S E. 2 feet deep

40.00 Set a hard Sand Stone 15×12×4 ins – 10 ins in the ground for 1/4 Sec. Cor. marked 1/4 on W. face dug pits 18×18×12 ins N and S of stone 5½ ft disk and raised a mound of earth 1½ ft high 3½ ft base alongside

Ascend

71.00 Top of hill.

Descend

80.00 Set a hard Sand Stone 18×12×3 ins – 12 ins in the ground for Cor. to Secs. 13, 18, 19 and 24. marked with 3 notches on N and S. edges and 6 notches on E face, dug pits 18×18×12 ins. in each sec. 5½ ft disk and raised a mound of earth 2 ft high 4½ ft base alongside.

Land – rolling and broken

Soil – clay, sand and gravel 3rd rate

No timber.

At 12 m. diurnal change has diminished Va 3'

South bet Secs 19 and 24

Va 12° 42' E.

Over rolling ground. descend

1.80 Ravine, course S. E. 5 ft lower than Cor.

Ascend

6.00 Top of hill or ridge bears N W. and S E.

Exterior Boundaries T 34 N. R. 16 W. Continued

Chains Descend

20.00 Enter Valley, bears N W. and S E.
Over level valley

40.00 Set a hard Sand Stone 18×10×3 ins – 12 ins in the ground for 1/4 sec. Cor. marked 1/4 on W. face dug pits 18×8×12 ins, N and S. of Stone 5 1/2 ft. dish and raised a mound of earth 1 1/2 ft high, 3 1/2 ft base alongside

48.70 Intersect the left bank of Keya Paha River, Sandy 4 ft high. River about 1.50 chs wide.
Set a hard Sand stone 16×8×4 ins – 11 ins in the ground for meander Cor. to fractional secs. 19 and 24 marked M. C. on S. face, dug a pit 36 ins square 1 ft deep 8 lks N. of Stone, and raised a mound of earth 2 ft high 3 1/2 ft base alongside, from which
A Cottonwood 4 ins diam, bears N 15° E 77 lks dist. Marked T 34 N. R 16 W. S 19 M. C. B. T.
A Cottonwood 6 ins diam bears N 77° 10' W. 110 lks dish marked T 34 N. R. 17 W. S 24. M C. B T.
Land level and rolling
Soil Clay and Sandy Valley 2d rate & hills 3d rate
Timber – Small scattering Willows and Cotton wood brush. There has been large Cotton wood trees along the river but have been all cut down

To connect the above Meander Cor. with that of former surveys on the right bank of the river. I go to the Cor. to Secs. 19, 24, 25, and 30, which is a mound of earth, and pits in each sec. The line N. bet. Secs. 19 and 24 was run at a Va. of 14° 08' E. and distance to the M C 49.40 chs. I allow for diminished Va. for 18 years 1° 12' and run thence
North bet. secs. 19 and 24
Va 12° 56' E.
At 2.00 chs enter bottom bears N E. and S W.
at 4.70 chs Creek 20 links wide runs N E

Exterior Boundaries T 34 N. R 16 W. Continued

Chains

At 10.50 chs leave bottom bears N W. and S W.
" 38.00 chs Enter bottom
at 40.00 chs. in a Corn field: I am unable to find 1/4 sec Cor. or the Oak bearing tree
At 48.10 chs. Intersect the right bank of Keya Paha River. This distance taken from 49.40 chs. leaves 1.30 chs of bank that has been cut away by the river,
Although not being able to find the 1/4 sec. Cor. or M. C. I now return to the M. C. on left bank and run west 13.05 chs and intersect my random line, bet. Secs. 19 and 24, 45.06 chs. North of the Sec Cors. to 19, 24, 25, and 30.
The result of the above measurements is as follows

Distance North of River to M. C.	48.70 chs
Distance South of River to Offset	45.06 chs
Total distance	93.76 chs
Subtract	80.00 chs
Excess in Latitude is	13.76 chs
Difference in departure is	13.05 chs.

October 2. 1890.

Latitude Departures and Closing Errors

Line designated as	Orne Bearing	Orne Distance	Latitude N	Latitude S	Departure E	Departure W
W boundary	North	288.70	288.70			
N boundary	East	478.65			478.65	
E boundary	South	276.00		276.00		
S boundary	Meanders	729.08	201.48	212.33	19.23	498.57
	Convergency 3 1/2 ms				.38	
			490.18	488.33	498.26	498.57
Totals			488.33			498.26
Error in Latitude			1.85	Error in Departure		.31

General Description

The land of this Township is low, gently rolling table land, South sloping bluffs, and river bottom. The soil of the table land is generally a dark Clay loam, with gravelly ridges and varies from 1st to 3d rate
The Township line runs over a succession

of gravelly spurs from the main divide between Fouca Creek and the Keya Paha River, and over undulating, or gently rolling table land.
It is watered by numerous springs in the heads of small drains, or ravines, which form small streams of water or sink into the earth before reaching the river.
Grass — There is a fine growth of Buffalo and bluejoint grass.
Stone is observed south of the North boundary in two or three places, sufficient for the sub-division corners.
No timber is found near the lines except a few trees (Cottonwood) along the Keya Paha River.

Chains | Survey commenced Oct 8, 1890 with Burts improved Solar Compass, made by Wm J. Young of Phila. Penn and numbered 4437 in perfect adjustment.
Before dark, at my camp I prepare to observe Polaris by driving a picket 4½ chs south of the Cor. to Tps 34 and 35 N. Rs. 16 and 17 W. on line bet Secs. 1 and 6, I observe Polaris at 7h 31m by my watch.
The Magnetic bearing of the Stars. 11° 08' E
The Latitude is N. 42° 57' Long. 99° 23' W.

	h	m
Astronomical mean time by watch. compared with Solar Compass this afternoon	7	31.
Tabular local Mt U.C. Polaris Oct 1.	12.	35.7
Reduction for Oct 7		23.5
Local Mt U.C. Polaris Oct 7	12	12.2
Which taken from time of Obs. leaves hour angle of Polaris	19	18.8
Subtract from	23	56.
Argument for Tab II	4	37.2
Azimuth	1°	37' E
North end of needle	11°	08' E
The sum is the Va.	12°	45' E

I lay off Azimuth 1° 37' to the West and drive a picket at 2 p. corner which is on the line

Oct 8th 1890

At 7 a.m. Oct 9 1890. I set my compass over the center of Cor. to Tps. 34 and 35 N. Rs. 16 and 17 W. which is a stone firmly set and properly marked and witnessed as hereinbefore described on page 95 of Notes of Survey of exterior boundaries Tp 34 R 16 W. and direct it to the point of observation last night, and find the magnetic bearing of the true meridian to be N. 14° 48' W which corrected by table on page 55 of the Manual of Instructions gives for mean declination 12° 45' E
Thence I run.

Exterior Boundaries T 34 N. R 17 W. Continued

Chains	
	West on a trueline bet Secs. 1 and 36. Va. 17° - 48' E.
	Ascend steep ridge 10 ft high
.70	Top of ridge - bears S W. and N E. 10 ft high
	descend
9.70	Sandy ravine, course S.
	Ascend
19.50	Top of gravelly hill. bears N W. and S E.
	descend
28.50	Washout course S. 15 ft deep
40.00	Set a hard Sand Stone 15+9+6 ins. - 10 ins. in the ground for 1/4 Sec. Cor. Marked 1/4 on N. face dug pits 18+18+12 ins E. and W. of Stone 5 1/2 ft dist and raised a mound of earth 1 1/2 ft high 3 1/2 ft base alongside.
	Down rolling ground
40.70	Drain course S. 15 ft deep
49.00	Ravine course S. 8 ft deep
61.00	Broad drain course S.
73.00	Enter Valley, bears N. and S.
80.00	Set a hard Sand Stone 16+12+4 ins - 11 ins in the ground for Cor. to Secs. 1, 2, 35, and 36 Marked 1 Notch on E. and 5 Notches on N edges, and 6 Notches on S face, dug pits 18+18+12 ins in each Sec. 5 1/2 ft dist and raised a mound of earth 2 ft high 4 1/2 ft base alongside.
	Land rolling
	Soil - mixed Sand Clay and gravel 3d rate Good only for grazing
	No timber.

West on a trueline bet. Secs. 2 and 35 Va 17° 48' E.

	Down gently rolling ground
2.75	Sandy drain course S.
3.75	Lower Valley - bears N. and S.
	Over low hills
6.90	Sandy drain Course S E.
18.10	Ravine course S 5 ft deep
	Ascend

Exterior Boundaries T 34 N R 17 W. Continued

Chains	
30.40	Top of gravelly hill - bears N W. and S E.
	Thence over gravelly ground - descending
37.00	Ravine course S.
	Ascend
40.00	Set hard Sand Stone 14+10+4 ins - 9 ins. in the ground for 1/4 Sec. Cor. marked 1/4 on N face, dug pits 18+18+12 ins E and W. of Stone 5 1/2 ft dist and raised a mound of earth 1 1/2 ft high 3 1/2 ft base alongside
50.00	Top of gravelly hill, bears N W. and S E.
56.00	South W. point of gravelly hill.
	descend
56.50	Road - bears N E. and S W.
69.00	Ravine course S W.
	Thence along South slope of ravine near top
80.00	Set hard Sand Stone 18+12+4 ins - 12 ins in the ground for Cor. to Secs. 2, 3, 34 and 35 marked 2 notches on E. and 4 notches on W. edges and 6 notches on S face dug pits 18+18+12 ins in each Sec. 5 1/2 ft dist and raised a mound of earth 2 ft high 4 1/2 ft. base alongside
	The N E. and N W. pits are in a newly dug cellar of settlers cabin
	Land rolling
	Soil Sandy and gravelly 3rd rate
	No timber
	There is a Spring about 1 ch S E. of Cor. in North bank of ravine or Springboy.

West on a true line bet. Secs. 3 and 34 Va 17° 48' E

	Along south side of divide between ravines
26.00	Spring branch. 3 lks wide runs S.
36.60	Small drain course S W. 8 ft deep
	Ascend
110.00	Set a hard Sand Stone 14+10+6 ins - 9 ins in the ground for 1/4 Sec. Cor. marked 1/4 on N. face dug pits 18+18+12 ins E. and W. of Stone 5 1/2 ft dist and raised a mound of earth 1 1/2 ft high 3 1/2 ft base alongside

Chains	
	On E slope of hill, half way to top
43.00	Top of hill
63.80	Ravine course SW. 30ft deep
74.50	Ravine course S. 20ft deep
80.00	Set a hard sand stone 18+10+5 ins – 17 ins in the ground for Cor. to Secs. 3, 4, 33 and 34. marked 3 Notches on E. and W. edges, and 6 Notches on S face. dug pits 18+18+17 ins in each Sec. 5 ft dist. and raised a mound of earth 2 ft. high 4 ft base alongside
	Land – broken by ravines along Creek
	Soil Clay 3d rate
	No timber.

	Local attraction at 8.30 a.m. has increased Va 3'
	West on a true line bet. Secs. 4 and 33. Va. 17° 51' E.
	Over level ground
16.00	descend
19.50	Drain course SW. 4 ft deep
20.50	Same drain course NW. 4 ft deep
25.00	Same drain course SW. 4 ft deep and Enter Valley bears N. and S.
26.95	"Spotted Tail" Creek. 5 links wide, runs South banks steep 3 ft high begin
	Ascending bluffs bears N. and S.
40.00	On East slope of hill
	Set hard sand stone 16+10+4 ins – 11 ins in the ground for 1/4 Sec. Cor. marked 1/4 on N. face dug pits 18+18+17 ins on E. and W. of Stone 5 ft dist. and raised a mound of earth 1 ft high 3 ft base alongside
45.00	Top of rolling table land
56.20	Ravine course SE. 25 ft deep
70.50	Ravine course SE. 25 ft deep
73.00	Enter fine E. slope
80.00	Set hard sand stone 18+10+4 ins – 17 ins in the ground for Cor. to Secs. 4, 5, 32 and 33. marked with 4 notches on E. and 2 notches on W. edges and 6 notches on S. face dug pits 18+18+17 ins in each Sec. 5 ft dist. and raised a mound

Chains	
	of earth 2 ft high. 4 ft base alongside
	Land – rolling and broken
	Soil Clay 3d rate farm land, good grazing
	Timber – clumps of Plum and Willow bushes along the Creek

	West on a true line bet. Secs. 5 and 32 Va 17° 51' E
	Over gentle East slope
13.00	Top of hill, 40 ft higher than last Cor. descend
31.00	Ravine course S. 15 ft deep
40.00	Set a hard sand stone. 16+9+5 ins, 11 ins in the ground for 1/4 Sec Cor. marked 1/4 on N. face, dug pits 18+18+17 ins E. and W. of stone 5 ft dist and raised a mound of earth 1 ft high 3 ft base alongside
	This Corner is nearly at bottom of West slope of ravine
40.25	Bottom of ravine course S.
51.00	Ravine course SE. 25 ft deep
60.00	Enter undulating ground
80.00	Set hard sand stone 18+10+5 ins, 12 ins in the ground for Cor. to Secs 5, 6, 31 and 32. marked 5 Notches on E. and 1 notch on W. edges and 6 notches on S. face. dug pits 18x18+11 ins in each Sec. 5 ft disk and raised a mound of earth 2 ft high 4 ft base alongside
	Land rolling
	Soil E 13 chs dark clay loams 1st rate balance 2d and 3d rate
	No timber

	West on a true line bet. Secs. 6 and 31 Va 17° 51' E
	Over gently ascending ground
5.00	descend
37.95	Dry Creek course S. 5 ft lower than top of table land: banks 3 ft high
	descend
40.00	Set hard sand stone 16+12+4 ins – 11 ins in the ground for 1/4 Sec. Cor. marked 1/4 on N face

Exterior Boundaries T 34 N. R 17 W. Continued

dug pits 18×18×12 ins E. and W. of stone 5½ft disk and raised a mound of earth 1½ft high 3½ft base alongside

49.00 Ravine course SE. 8ft deep

49.50 Ravine course SE. 15ft deep

55.00 Enter table land
---- Leave table land
61.00 Descend

78.00 Short ravine course NW heads 1ch S.E.
Ascend gravelly bank

78.65 On East slope of ridge
Set hard sand stone 18×18×5 ins – 18 ins in the ground for cor. to Tps 34 and 35 N. Rs 17 and 18 W
Marked
T34N on S. end
T35N on N edges
R17W at top and below S31 on N. S6 on S sides of East face
R18W at top, and below S36. on N. S1 on S sides of West face. 6 notches on each side, at each on top of stone. Raised a mound of stone 3½ft high 4ft base alongside
Pits impracticable on account of hard gravelly and stony ground
This corner stands 8ft above bottom of ravine
Land rolling
Soil – Table land – clay 2d rate
balance 3d rate
No timber

At 12 M. I observe Lat. and find it to be 42°. 57' + N
At 2 P.M. I set my compass over the center of the corner to Tps 34 and 35 N Rs. 17 and 18 W and adjust it to a true Meridian by the Solar Apparatus. The Magnetic bearing of the true meridian I find to be N 12° 48' W which corrected by the Manual of instructions gives for mean declination 12° 51' E
Thence I run
South bet. Secs. 1 and 6

Va. 12° 48' E

Exterior Boundaries T 34 N R 17 W Continued

Chains Ascend gravelly stony hill 10ft high
.80 Top of ridge bears E. and W.
Descend
8.15 Ravine course W. 15ft deep
15.70 Ravine course W 10ft deep
20.00 Enter Valley bears N W. and S E.
20.30 "Wolf Creek" course E dry on line
23.50 Same Creek course S W.
26.30 Same Creek course E.
34.00 Leave Valley bears N W. and S E.
Ascend steep spur of bluffs
36.40 Top of E spur of bluffs
descend
39.00 Enter Valley bears N E. and S W.
40.00 Set hard sand stone 18×10×4 ins – 12 ins in the ground for cor. to Sec. Cor. marked ¼ on W face dug pits 18×18×12 ins. N and S. of stone 5½ft disk and raised a mound of earth 1½ft high 3½ft base alongside
44.60 Same Creek. Water on line 10 lks wide course S W.
54.50 Same Creek course S E.
56.90 Same Creek course S W.
62.00 Same Creek course S E.
63.10 Same Creek course S W.
63.70 Road bears N E. and S W.
64.00 Leave Valley bears N E. and S W
Enter low foot hills
78.75 Enter Valley
80.00 Set hard sand stone 18×10×4 ins – 12 ins in the ground for cor. to Secs. 16, 17 and 21 marked with 1 notch on N. and 5 notches on S edges and 6 notches on E. face dug pits 18×18×12 ins in each Sec. 5½ft disk and raised a mound of earth 2ft high 4½ft base alongside.
Land. rolling and level
Soil – North of Valley gravelly 3d rate
Valley dark clay loam 1st rate
Balance 3d rate
Timber. Elm and Willow thickets along Creek
Scattering Oak brush along South 20 chs.

Exterior Boundaries T 34 N. R. 17 W. Continued

Chains South bet Secs. 7 and 12
Var. 12° 48' E.
Down valley through small Oak brush
7.80 Road - bears N W. and S E.
13.10 Same road bears N E. and S W.
15.10 Same road bears N W and S E.
23.65 Wolf Creek, 65 links wide runs N E.
Over sandy ground through scattering Willows
27.10 Intersect left bank of Keyabaha River
banks sandy 8 ft high.
Set hard sand stone 18 x 10 x 4 ins, 12 ins in the ground
for meander Cor. to fractional Sections 7 and
12. marked M.C. on South face, dug pit
36 ins. Square 1 ft deep 8 links North of Stone
and raised a mound of earth 2 ft high 4 ft
base alongside. from which
A Cottonwood 7 ins diam. bears N 54° W
69 links dist marked T 34 N. R 18 S 12 M.C.
B.T.
No other trees within limits.
Land undulating
Soil - N. of Creek Clay loam 1st rate
S. of Creek Sandy 4th rate
Timber. Plum Willow Ash Cottonwood and
Oak brush

To connect the above Meander Cor. with that
of former survey on right bank of river, I
continue the line South across the river, 4.99 chs to a
point 10 chs 46 links East of Meander Cor.
between frac. Secs. 7 and 12, which is a mound
of earth on high bank, with piece of old stake
in mound and Pit S. on line.
To find the excess, I add the following distances
27.10 chs to M.C. North of river
4.99 chs across river
61.45 chs to M.C. South of river
93.54 chs
Subtract 80.00
13.54 chs. Excess of Latitude
Def in departure 10.46 chs

Oct 9. 1890

Exterior Boundaries T 34 N. R 17 W Continued

Latitudes Departures and Closing Errors.

Line designated as	True Bearing	Distance	Latitude N	Latitude S	Departure E	Departure W
N. boundary	North	107.10	107.10			
N. boundary	East	478.65			478.65	
E. boundary	South	288.70		288.70		
S. boundary meanders		714.25	253.76	74.86	6.80	484.13
Convergency 1¼ ms					.14	
			360.86	362.76	485.59	484.13
Totals				360.86	484.13	
Error in Latitude				1.90		
Error in Departure					1.46	

General Description

This Township is low tableland, South slope
and river valley
The N. line is over S. gravelly spurs of the divide
Valley clay soil
Tableland. The low tableland is clay ground
from 1st to 3d rate
There is a good growth of buffalo and young
blue joint grass
It is well watered along the North part by spring
branches which rise at the foot of the gravelly
hills in Sec 34 and 35.
There is a little brush along the Creek on
West line and along the river.

Exterior Boundaries T 34 N. R 18 W.

Chains	
	Survey Commenced Oct 17 1890. with Burts improved Solar Compass, made by Wm. J. Young of Phila Pa and numbered 4432 in perfect adjustment
	At 7 a.m. I set my Compass over the Center of Cor. to Sps 34 and 35 N. Rs 17 and 18 W. which is a Stone firmly set and properly marked and witnessed as hereinbefore described on page 106 of Notes of Survey of Exterior boundaries T p. 34 N. R 17 W. and adjust it to a true meridian by the Solar apparatus, I find the magnetic bearing of the true meridian thus determined to be 14° 53' W. The Variation is 14° 53' E. which corrected by table on page 55 Manual of instructions gives for mean declination 14° 51' E
	Note This morning before leaving my camp I compared my chain with the Govt Standard and made the same to agree therewith
	From the above described Sp Corner. I run West on a true line bet. Secs. 1 and 36 Va 14° 53' E.
	Ascend
.50	To top of sharp gravel hill, 8 ft higher than Cor
	descend
2.00	Ravine 3 ft deep course S.
	Ascend
5.00	Top of hill
	descend
5.75	West edge of abrupt bank bears N. and S.
7.00	Wolf Creek, dry on line Course S. 3 ft below top of hill – here
	Enter Valley bears N. and S.
17.00	Leave Valley bears N and S.
	Ascend
37.00	Ravine course S E.
39.75	Top of ridge and descend

Exterior Boundaries T 34 N R 18 W. Continued

Chains	
40.00	Set hard Sand stone, 14 x 10 x 4 ins – 9 ins in the ground for 1/4 sec. Cor. marked 1/4 on N. face dug pits 18 x 18 x 12 ins E. and W. of Stone 5 1/2 ft disk and raise a mound of earth 1 1/2 ft high 3 1/2 ft base alongside
43.00	Ravine Course S E. 6 ft deep
	Ascend
46.50	Stony ridge, bears N W. and S E.
72.00	Ravine course S E. Ascend
76.00	Top of long ridge Descend
80.00	Set White lime Stone, 16 x 12 x 4 ins 12 ins in the ground for Cor. to Secs. 1, 2, 35 and 36, marked with 1 Notch on E and 5 notches on W. edge, and 6 notches on S. face, dug pits 18 x 18 x 12 ins for each Sec, 5 1/2 ft disk and raised a mound of earth 2 ft high 4 1/2 ft base alongside
	Land rolling and broken
	Soil gravelly and clayloam 2d and 3d rate
	Sand stone scattered along West half mile and about 10 chs N E. from Sec Cor. is a broken ledge of sand stone on S face of flat topped hill, about same distance N W. is Sand stone Butte.
	Timber – Small clumps of bushes along Wolf Cr.
	West on a true line bet. Secs 2 and 35 Va 14° 53' E
	Descend 5 ft to
.50	Ascend
17.50	Top of hill
	descend
34.00	Ravine course S E.
37.00	Ravine course S E.
40.00	Set lime stone 14 x 8 x 6 ins 9 ins in the ground for 1/4 Sec. Cor marked 1/4 on N. face dug pits 18 x 18 x 12 ins E. and W. of Stone 5 1/2 ft disk and raised a mound of earth 1 1/2 ft high 3 1/2 ft base alongside
44.00	Top of ridge. bears N W. and S E.
	descend
72.50	Ravine course S E. 4 ft deep

Chains	
	Ascend
77,50	Top of hill
	Descend gently
80,00	Set hard sand stone, 16+8+5 ins, – 17 ins in the ground for cor. to secs. 2, 3, 34 and 35, marked with 2 notches on E and 4 notches on W. edges and 6 notches on S. face, dug pits 18×18+17 ins in each sec. 5 ft. dish and raised a mound of earth 2 ft high 4½ ft base alongside.
	Land rolling
	Soil – Clay 3d rate farm land
	No timber

West on a true line bet. secs. 3 and 34
Va 12° 53' E

Chains	
	Gentle ascent
15,00	Top of stony bluff or hill
	descend
25,00	Ravine course N W.
	Ascend
28,50	Top of hill
	Descend
33,30	Shallow ravine 10 ft deep below top of hill course N.
	Ascend
40,00	Set hard sand stone 16×17+3 ins 11 ins in the ground for ¼ sec cor. marked ¼ on N face dug pits 18×18+12 ins E, and West of stone 5½ ft dish and raised a mound of earth 1½ ft high 3½ ft base alongside
40,70	Top of low hill. Stone cropping 10 lks North of line – descend
46,00	Enter Valley bears N. and S.
57,00	Shingle Creek, bank 10 ft high course S. water in holes
61,50	Leave Valley bears N. W. and S. ascend
71,00	Top of low ridge bears N W. and S E. descend
	gentle slope
80,00	Set hard sand stone 18+10+5 ins, 17 ins in the ground for cor. to secs. 3, 4, 33 and 34, marked with 3 notches on E and W. edges, and 6 notches

Chains	
	on S. face, dug pits 18+18+12 ins in each sec 5½ ft dish and raised a mound of earth 2 ft high 4½ ft base alongside
	Land rolling foothills smooth slope
	Soil – clay 2d and 3d rate
	No timber

West on a true line bet. secs. 4 and 33,
Va. 12° 53' E

Chains	
	Gentle ascent
8,00	Top of low divide descend
12,50	Ravine course S. 20 ft deep – ascend
30,50	North end of sharp stony ridge – descend
36,00	Ravine course S W.
40,00	Set a hard sand stone 16+7+5 ins – 11 ins in the ground for ¼ sec. cor. marked ¼ on N. face, dug pits 18+18+12 ins E and W from stone 5½ ft dish and raised a mound of earth 1½ ft high 3½ ft base alongside
	Enter Valley bears N. and S.
43,75	Road bears N. and S.
53,75	Indian Creek, 5 links wide, runs S W.
63,00	Leave Valley bears N. and S. ascend
68,25	Top of low sandy ridge bears N. and S.
	Gentle descent
78,00	Ravine course S E. Gentle ascent to
80,00	On South slope of hill
	Set hard sand stone, 18+10+4 ins 12 ins in the ground for cor. to secs 4, 5, 32 and 33 marked 4 notches on E, and 2 notches on W. edge and 6 notches on S. face, dug pits 18+18+12 ins in each sec. 5 ft. dish and raised a mound of earth 2 ft high 4½ ft base alongside.
	Land level and rolling
	Soil Valley clay 2nd rate
	Hills, sandy gravelly and stony 3d rate
	Timber – Some small brush along creek bank

West on a true line bet. secs. 5 and 32
Va 12° 53' E

Chains	
	Gentle descent

Exterior Boundaries T 34 N R 18 W. Continued

Chains	
3.80	Ravine course SE. ascend
7.50	Top of flat stony ridge – descend
12.70	Ravine course SE. 15 ft deep ascend
24.00	Top of ridge – descend
40.00	Set hard sand stone 16×8×4 ins – 11 ins in the ground for 1/4 sec. Cor. marked 1/4 on N face, and raised a mound of stone 1½ ft high 3 ft at base alongside. Pits impracticable on account of hard gravelly and stony ground
47.50	Ravine course S, 30 ft deep ascend
56.00	Top of hill – descend
66.00	Enter Valley bears N and S.
71.90	A dry creek, course SW, banks 8 ft high
78.00	Leave Valley, bears NE, and SW. Gentle ascent
80.00	On the E slope of hill. Set a hard sand stone 16×13×4 ins, 11 ins in the ground for Cor. to Secs. 5, 6, 31 and 32. marked with 5 notches on E and 1 notch on W edges and 6 notches on S. face, dug pits 18×18×12 ins in each sec. 5½ ft dish and raised a mound of earth 2 ft high 4½ ft base alongside

Land rolling and level

Soil – dark sandy, gravelly and stony land 3d and 4th rate

No timber.

At 9.30 AM Local attraction has decreased to 3′ West on a true line bet. secs. 6 and 31

Va 12° 50′ E

Ascend

12.70	Top of sand bluff – descend across "blowout"
13.00	Point of broken bluff – descend
	Over barren face of bluff
14.50	Intersect left bank of Kuyapaha River. Set hard sand stone 28×13×4 ins 21 ins in the ground for Meander Cor. to frac. Secs. 6 and 31 marked MC. on West face, dug a pit 36 ins square 1 ft deep, 10 links E of stone and raised a mound of earth 2 ft high 4½ ft base alongside and laid a

Exterior Boundaries T 34 N., R 18 W. Continued

course of flat sand stones around the corner to prevent washing

There are three dead Cottonwood which are nearly washed and blown out by wind and rain, and will soon be entirely washed away

There are no other trees within limits

To witness the above M.C. I run E. on the line bet Secs. 6 and 31, 2.50 chs to hard firm ground on South slope of bluff and

Set a hard sand stone 24×18×5 ins 18 ins in the ground for witness to M.C. marked thus M.C. to M.C. on West face, and dug a pit 36 ins square 1 ft deep E of stone 10 links distant and raised a mound of earth 2 ft high 4½ ft base alongside, and placed a layer of stone around the witness corner.

Land rolling

Soil Sandy 4th rate

No timber except trees above mentioned

To connect the above Meander Cor with former survey on right bank of river

I go to the 1/4 Sec Cor. bet. secs 6 and 31 Tp 34 and 35 N. R 18 W. which is a mound of earth with pits E. and W. of corner, an upper pack of red cedar post marked 1/4 S in mound. The distance to the M.C. on right bank of river is 63.00 chs. according to notes from Genl. Land Office

I run East from said 1/4 sec Cor on true line bet. Secs. 6 and 31.

41.00 chs. Spring boy. (Courtesy from Tp Cor.)

49.50 chs Enter Valley

63.00 chs I search for meander corner, on high bank and open prairie, without success

64.00 chs. Intersect Kuyapaha River at water edge

I continue line across the river to 75.32 chs which is a point 18.20 chs South of Meander Cor on left bank bet. Secs. 6 and 31, established this afternoon.

To ascertain the excess between 6 and 31 I add the following distances

Exterior Boundaries T 34 N R. 18 W. continued

Total distance from East ¼ Sec Cor	75.37 chs
Distance bet Secs 6 and 31 E from	14.50 chs
Total	89.87 chs
Subtract	80.00
Excess	9.87 chs
Difference in Latitude between the 2 fractional lines	18.70 chs

Note In running the line between Secs 6 and 31 East from the ¼ Cor. to Tps 34 and 35 N. Rs 18 and 19 W. to the Keya Paha River in previous Surveys the ¼ Sec cor was set at 40.00 chs no allowance having been made for Convergency.

By adding the Convergency on the South boundary of this Tp which is 70 links to the Convergency of the North boundary taken from table IX. 67 links, making a total of 1.37 chs. which subtracted from 80 chs would leave for the true length of line 78.63 chs which subtracted from the above 89.87 chs would leave for true excess 11.19 chs

Oct. 17 1890

Exterior Boundaries T 34 N R 18 W, continued

General Description

The land of this Township is South sloping bluffs and foot hills, and river valley.

The soil of the rough land is clay sandy gravelly and stony 2d and 3d rate

In Valley - dark sandy and clay soil from 1st to 3d rate

There is considerable broken Sand stone flags along the hill sides.

Timber, consists of white willow and Cottonwood brush along the river

Buffalo grass on the hills and bluejoint on the Valley.

List of Names.

A list of the names of the individuals employed by Robert Harvey, U. S. ~~Deputy~~ Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of the fractional West boundaries of Ts 34 N. Rs 9 and 10 W. – North and fractional West boundaries T. 33 N R 11 W. – West and fractional North boundary T. 34 N. R 11 W. – North and fractional West boundaries Ts 33 N Ranges 12 and 13 W. – North and West boundaries Tps 34 N. Ranges 12 and 13 West – Fractional North boundary T. 33 N. R 14 W. North and fractional West boundaries Tps 34 N. Ranges 14. 15. 16 and 17 West and fractional N. boundary T. 34 N R 18 West of 6th Principal Meridian, in Nebraska, showing the respective capacities in which they acted:

Benjamin H Davidson Chainman
Charles St Paul Chainman
Henry A Burrell Axeman
Elias J. Hershiser Axeman
Sumner C Lyle Axeman
Johnathan D Peden Flagman

Final Oath of Assistants:

We hereby certify that we assisted Robert Harvey, U. S. ~~Deputy~~ Surveyor, in surveying all those parts or portions of the fract. W. boundary of Ts 34 N Ranges 9 and 10 W. North and fract. West boundary T 33 N. R 11 W. West and fract. North boundary T 34 N R 11 W. North and fract. West boundaries Ts. 33 N Rs 12 and 13 West North and West boundaries Tps 34 N Ranges 12 and 13 West Fractional North boundary T 33 N R 14 W. North and fractional West boundaries Ts. 34 N Ranges 14. 15. 16 and 17 West and fractional North boundary T. 34 N R 18 West of 6th Principal Meridian, in Nebraska, as are represented in the foregoing field notes as having been surveyed by him and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the ~~U. S. Surveyor General for~~ Commissioner of the General Land Office

Benjamin H. Davidson Chainman
Charles St Paul Chainman
Henry A. Burrell Axeman
Sumner C. Lyle Axeman
Jonathan D. Peden Flagman

Subscribed and sworn to before me this 26th day of October, 1890

SEAL

C H Dam
Notary Public

6—151

Final Oath of U. S. Deputy Surveyor.

I, Robert Harvey, U. S. ~~Deputy~~ Surveyor, do solemnly swear that, in pursuance of instructions received from the Commissioner of the, ~~U. S. Surveyor General for~~ General Land Office, bearing date of the 26th day of May, 1890, I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the ~~U. S. Surveyor General for~~ Commissioner of the General Land Office, the surveying manual, and the laws of the United States, surveyed all those parts or portions of fractional West boundaries Ts 34 N. Rs 9 and 10 W. — North and fractional West boundary T 33 N R 11 West — West and fractional North boundary T 34 N. R 11 W. — North and fractl West boundaries Ts 33 N Rs 12 and 13 W. — North and West boundaries Ts 34 N. Rs 12 and 13 W. — Fractional North boundary T 33 N R 14 W. — North and fractional West boundaries Ts. 34 N. Rs 14, 15 and 16 and 17 West — Fractional N. Boundary T 34 N. R 18 West 6th Principal Meridian, in ~~the~~ Nebraska, as are represented in the foregoing field notes as having been surveyed by me, and under my directions; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the surveying manual, printed instructions, the special written instructions of the ~~U. S. Surveyor General for~~ Commissioner of the General Land Office and in the specific manner described in the field notes, and that the foregoing are the true field notes of such survey; and should any fraud be detected, I will suffer the penalty of perjury under the provisions of an Act of Congress approved August 8, 1846.

Robert Harvey
U. S. Deputy Surveyor.

Subscribed and sworn to before me this 17 day of February, 1891

C. E. Forbes
Clerk Dist Court
F. A. W.

SEAL

Approval.

Office of the ~~U. S. Surveyor General~~, Commissioner, Gen'l Land Office
Washington D.C. June 30, 1891.

The foregoing field notes of the survey of fractional West boundaries T. 34 N. R. 9 and 10 W. — North and fractional W. boundaries T. 33 N. R. 11 W. — W. & fractional N. boundaries T. 34 N. R. 11 W. — N. and fractional W. boundaries T. 33 N. Rs 12 & 13 W. — N. & W. boundaries T. 34 N. Rs 12 & 13 W. — Fractional N. Boundary T. 33 N. R. 14 W. — N. and fractional W. boundaries T. 34 N. Rs 14, 15, 16 and 17 W. — Fractional N. boundary T. 34 N. R. 18 W. 6th Principal Meridian Nebraska executed by U. S. Surveyors Nicholas J. Paul and Robert Harvey under ~~his~~ their Contract No. ——, dated May 26th, 1890, having been critically examined, the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

J. H. Carter
Commissioner Gen'l Land Office
Ex Officio Surveyor General.

~~U. S. Surveyor General.~~

~~I certify that the foregoing transcript of the field notes of the above-described surveys in ....., has been correctly copied from the original notes on file in this office.~~

6—151

U. S. Surveyor General.

Rec'd with letter of R. B. Hughes Surveyor Genl. S.D.
Huron S.D. Feb 8. 1897.

(4—679.)

2670

Book "A"

FIELD NOTES

OF THE SURVEY OF

the North boundary of Townships No. 34 North Ranges No. 10 and 11 West; the East boundary of Townships 34 and 35 North, Range 11 West, and the east and West boundaries of Township 35 North Range 12 West

Of the 6th Principal Meridian,

Nebraska

AS SURVEYED BY

Charles H Bates, U. S. Deputy Surveyor,

Under his Contract No. 106, dated March 28th 1895.

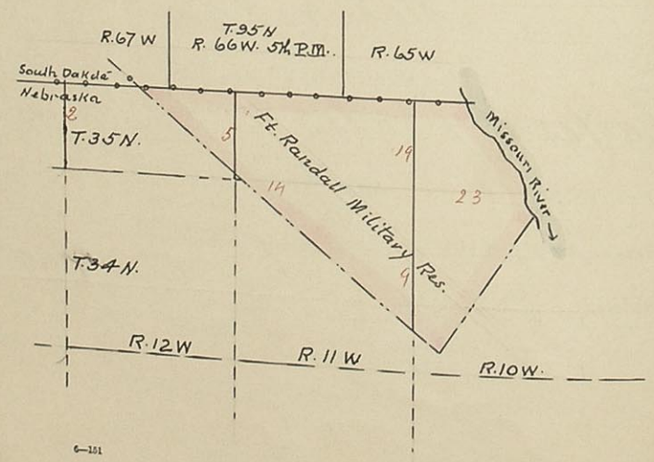
Survey commenced June 3, 1895.

Survey completed August 15th, 1895.

(12503—2,000.)

Names and Duties of Assistants.

INDEX.



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INDEX DIAGRAM.

Township 95 . *Range* 12 W.

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Meanders Page

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Preliminary Oaths of Assistants.

We, ...

do solemnly swear that we will well and faithfully execute the duties of chain carriers; that we will level the chain over even and uneven ground, and plumb the tally-pins either by sticking or dropping the same; that we will report the true distance to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance with instructions given us in the survey of the .....

..... , Chainman.

..... , Chainman.

..... , Chainman.

..... , Chainman.

Subscribed and sworn to before me this .....
day of ....., 18 .

We, ...

do solemnly swear that we will well and truly perform the duties of axemen in the establishment of corners and other duties, according to instructions given us, and to the best of our skill and ability, in the survey of the .....

Subscribed and sworn to before me this .....
day of ....., 18 .

..... , Axeman.

..... , Axeman.

6—151

West boundary of T. 35 N., R. 12 W. of the 6th. P.M.

Survey commenced June 3d. 1895. and executed with a Burts improved solar compass No. 4834 made by Young and Sons. Phila, Pa.

The horizontal limb is provided with two opposite verniers reading to ... as the ... and

... ned. tested ... ok. found ... the ... hota, May

... the 1/4 sec. cor. ... W., latitude ... h 30m p.m. ... at. arc. ... nd de= ... the solar, ... a stake ... s. N. of

... I observe ... in ac= ... tructions, ... in thus ... tation, ... inuth of ... ark the ... on the ... no ap= ... line. ... on ... ed.

... the lat. arc, and 22° 29' N. ... arc. and find no appreciable ... in the solar line, from the ... meridian established from ... The solar apparatus by p.m. ... observations therefore defines th...

FIELD NOTES

OF THE SURVEY OF

North boundary of Tps. No. 34 N., Rs. 10 and 11 W.. The east boundary of Tps. 34 and 35 N.. R. 11 W. and the east and west boundaries of Tp. 35 N. R. 12

WEST OF THE ~~FIFTH~~ Sixth PRINCIPAL MERIDIAN,

~~SOUTH DAKOTA~~.

Nebraska.

Surveyed by Charles H. Bates.
Deputy Surveyor.

Under his contract No. 106

Dated March 28th, 1895

Survey commenced June 3d., 1895

Survey completed August 15th, 1895

Preliminary Oaths of Assistants.

We, ...

do solemnly swear that we will well and faithfully execute the duties of chain carriers; that we will level the chain over even and uneven ground, and plumb the tally-pins either by sticking or dropping the same; that we will report the true distance to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance

Subscribed and sworn to before me

day of .....

We, ...

do solemnly swear that we will well

duties, according to instructions giv

Subscribed and sworn to before me

day of .....

NAMES AND DUTIES OF ASSISTANTS:

Tim Burns.	Chainman.
E.W. Hinedale	Chainman.
A.M. Fox.	Moundsman.
E.R. Cook.	Moundsman.
C.H. Armstrong.	Moundsman.
H.M. Finotti.	Moundsman
C. Wright.	Flagman & M.

} ....., Axeman.

PRELIMINARY OATHS OF ASSISTANTS.

We, Tim Burns and E.W. Hinedale

do solemnly swear that we will well and faithfully execute the duties of chain-~~carriers~~ men; that we will level the chain ~~over~~ upon even and uneven ground and plumb the tally pins either by sticking or dropping the same; that we will report the true distance to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance with instructions given us in the survey of the north boundaries of Tps. 34 N.; Rs. 10 and 11 W. The east boundaries of Tps. 34 and 35 N., R. 11 W. The east and west boundaries of Tp. 35 N. R. 12 W. of the 6th principal meridian in the State of Nebraska.

Tim Burns, Chainman.

E W Hinedale, Chainman.

....., Chainman.

....., Chainman.

Subscribed and sworn to before me this 29th day of May, 1895

A H Mellen

Notary Public

West boundary of T. 35 N., R. 12 W. of the 6th. P.M.

Survey commenced June 3d. 1895. and executed with a Burts improved solar compass No. 4834 made by Young and Sons. Phila, Pa.

The horizontal limb is provided with two opposite vernier reading to

the last arc, and 22° 29′ arc. and find no appreciable in the solar line, from the meridian established from The solar appearances by p.m. observations therefore defines the

Preliminary Oaths of Assistants.

We, ...

do solemnly swear that we will well and faithfully execute the duties of chain carriers; that we will level the chain over even and uneven ground, and plumb the tally-pins either by sticking or dropping the same; that we will report the true distance to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accord

Subscribed and sworn to before

day of .....

We, ...

do solemnly swear that we will

duties, according to instructions

Subscribed and sworn to befor

day of .....

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PRELIMINARY OATHS OF ASSISTANTS.

We, C. Wright, A. M. Fox, E. R. Cook, C. H. Armstrong, and H. M. Finotti,

do solemnly swear that we will well and truly perform the duties of Moundmen in the establishment of corners, and other duties, according to instructions given us, ~~and~~ to the best of our skill and ability, in the survey of the north boundary of Tps. 34 N.; R. 10 and 11 W. The east boundary of Tps. 34 and 35 N., R. 11 W. The east and west boundaries of Tp. 35 N., R. 12 W. of the 6th principal meridian in the State of Nebraska.

C. Wright Flagman
A. M. Fox Moundman
E. R. Cook, Moundman.
C. H. Armstrong, Moundman.
H. M. Finotti, Moundman.

Subscribed and sworn to before me, this 29 day of May, 1895

[signature]
Notary Public

2560 b—250

, Axeman.

West boundary of T. 35 N., R. 12 W. of the 6th. P. M.

Survey commenced June 3d. 1895. and executed with a Burts improved solar compass No. 4834 made by Young and Sons. Phila, Pa.

The horizontal limb is provided with two opposite verniers reading to single minutes. which is also the least count of the latitude and declination verniers.

The instrument was examined, tested on the meridian at Huron, S. Dak. found correct, and was approved by the surveyor general of South Dakota, May 11th, 1895.

June 3d. At my camp near the 1/4 sec. cor. bet. secs. 34 and 35. T. 35 N., R. 12 W., latitude 42°58', longitude 98°42'3 W. at 4h 30m p.m. l. m. t. I set off 42°58' on the lat. arc, and 22°24' N. on the decl. arc, and determine a true meridian with the solar, and mark a point thereof on a stake driven in the ground 5.00 chs. N. of my station.

June 4th. At 2h 33m a.m. l. m. t. I observe Polaris in eastern elongation, in accordance with Manual of Instructions, and mark a point in the line thus determined, 5.00 chs. N. of my station.

At 6h a.m. l. m. t. I lay off azimuth of Polaris 1°43' to the west, and mark the true meridian thus determined on the stake set by solar. and find no appreciable azimuth in the solar line.

At 6h 15m a.m. l. m. t. I set off 42°58' on the lat. arc, and 22°29' N. on the decl. arc, and find no appreciable azimuth in the solar line, from the true meridian established from Polaris.

The solar apparatus by p.m. and a.m. observations therefore defines the true

meridian, and adjustments correct.
At 8h 10m a.m. l.m.t. at the cor. of Tps. 34 and 35 N., Rs. 12 and 13 W. I set off 42°57'.5 on the lat. arc, and 22°28' N. on the decl. arc, and determine a true meridian with the solar.

The magnetic bearing of the true meridian at 8h 15m a.m. is N. 12° 12' W. the angle thus determined reduced by the table page 100. gives the mean mag. decl. 12°06' E.

From the cor. of Tps. 34 and 35 N. Rs. 12 and 13 W. which is a stone 8x8x2 ins. above ground, firmly set, and marked and witnessed as described by the Surveyor general.
I run
North bet. secs. 31 and 36.
Over high rolling land.
6.25 Wagon road, bears E. and W.
23.50 Drain, 100 lks. wide. course E. wagon road in drain.
40.00 Set a sandstone 14x12x4 ins. 9 ins. in the ground for 1/4 sec. cor. marked 1/4 on W. face. dig pits 24x24x12 ins. N. and S. of stone 3 ft. dist. and raise a mound of earth 3½ ft. base, 1½ ft. high, W. of cor.
49.70 Drain, 60 lks. wide. course S.E.
56.75 Drain, 50 lks. wide, course to the S.E. follows to
60.00 Leave same. course from the N.W.
63.80 Same drain, 55 lks. wide. course S.W.
66.45 Same drain 50 lks. wide, course S.E.
80.00 Set a sandstone 14x14x8 ins. 9 ins. in the ground for cor. of secs. 25. 30. 31 and 36. marked with 1 notch on S. and 5 notches on N. edges. dig pits 20x20x12 ins. in each sec. 5½ ft. dist. and raise a mound of earth 4 ft. base, 2 ft. high W. of cor.
Land. rolling
Soil. sandy loam. 2d. rate.

North bet. secs. 25 and 30
Over rolling land.
20.00 Drain, 70 lks. wide, course E.
24.90 Wagon road. bears S.W. and N.E.
40.00 Set a sandstone 12x11x4½ ins. 8 ins. in the ground for 1/4 sec. cor. marked 1/4 on W. face. dig pits 24x24x12 ins. N. and S. of stone 3 ft. dist. and raise a mound of earth 3½ ft. base, 1½ ft. high, W. of cor.
43.00 Drain, 250 lks. wide, course E.
47.00 Same drain, 300 lks. wide, course S.W.
52.30 Same drain, 50 lks. wide. course S.E.
70.40 Drain, 30 lks. wide. course W.
80.00 Set a sandstone 14x14x6 ins. 9 ins. in the ground for cor. of secs. 19, 24, 25 and 30. marked with 2 notches on the S. and 4 notches on N. edges. dig pits 20x20x12 ins. in each sec. 5½ ft. dist. and raise a mound of earth 4 ft. base, 2 ft. high W. of cor.
Land. rolling
Soil. sandy loam 2d. rate.

North bet. secs. 19 and 24.
Over rolling land.
40.00 Set a sandstone 16x12x8 ins. 11 ins. in the ground for 1/4 sec. cor. marked 1/4 on W. face. dig pits 24x24x12 ins. N. and S. of stone 3 ft. dist. and raise a mound of earth 3½ ft. base, 1½ ft. high, W. of cor.
41.73 Wire fence, bears E. and W.
58.95 Intersect boundary line bet. South Dakota and Nebraska at a point from which the 44th. mile stone, which is a quartzite shaft, 40x10x10 ins. above ground, firmly set, marked 44 M. on W. S.D. on N. and N. on S. faces. bears W. 6.53 chs.
Set a sandstone 16x12x8 ins. 11 ins. in the

ground for closing cor. of Tps. 35 N., Rs. 12 and 13 W., marked C.C. on S. face, with 6 grooves on E. and W. faces., dig pits 30x30x12 ins. E. and W. 4 ft. and S. of stone 8 ft. dist. and raise a mound of earth 5 ft. base 2½ ft. high S. of cor. Pits common on each line.
Land. rolling
Soil, sandy loam, 2d. rate.
In W. pit deposit a tightly sealed glass fruit jar. containing information for deputies Harvey and Gunnar, in accordance with special instructions

June 4th, 1895.

General description.

Townships 35 N. Rs. 12 and 13 W. are high rolling prairie. sandy soil. producing a thick growth of wild grasses. The Tps. are well settled. by a thrifty class of farmers, who have a considerable land under cultivation.

Boundaries T. 35 N., R. 12 W.
Latitudes, departures, and closing errors.

Lines Designated	True Bearing	Distance Chs.	Latitudes N.	Latitudes S.	Departures ~~Longitudes~~ E.	Departures ~~Longitudes~~ W.
West Bdy.	North.	218.95	218.95			
North "	East.	479.17			479.17	
East "	South	218.83		218.83		
South "	589°59' W.	478.55		0.14		478.55
Convergency.					0.31	
			218.95	218.97	479.48	478.55
				218.95	478.55	
	Closing errors.			0.02	0.93	

Chains

Aug 15th. At 7h 30m a.m. l.m.t. I set off 42° 57.5' on the lat. arc, and 14° 04' N. on the decl. arc, and determine a true meridian with the Polar at the cor. of Tps 34 and 35 N. R. 11 and 12 W. which is a stone finely set. 14x12x4 ins. above ground. marked and witnessed as described by the surveyor general.
Thence I run
North bet sec. 31 and 36.
Over rolling prairie.

2.12 Intersect S.W. bdy of the abandoned Fort Randall Military Reservation at a point from which the 14½ mile cor. bears N. 5° 38' W. 20.36 chs. dist.
Set a sandstone 14x10x4 ins. 9 ins. in the ground. for closing cor. of sec. 31 and 36. marked C.C. on S. face; dig pits 30x30x12 ins. N. 5° 38' W. 4 ft and S. of stone 8 ft. dist. and raise a mound of earth 4 ft. base 2 ft. high S. of cor.

7.28 Wagon road. bears N.W. and S.E.

40.00 Deposit a marked stone 12 ins. in the ground for ¼ sec. cor. dig pits 24x24x12 ins. N. and S. of cor. 4 ft. dist. and raise a mound of earth 3½ ft. base 1½ ft. high over deposit.
In S. pit drive a stake 2 ft. long 2 ins. sq. 12 ins. in the ground. marked ¼ S. on W. face.
Thence ascend sand ridge.

69.00 Top of ridge. bears E. and W. thence descend. broken and hilly country.

74.50 Drain. 20 lks. wide. course N.E.

80.00 Deposit a marked stone 12 ins. in the ground for cor of sec. 25. 30. 31 and 36. dig pits 20x20x12 ins. in each sec 5½ ft. dist. and raise a mound of earth 4 ft. base 2 ft. high over deposit.
In S.E. pit drive a stake 2 ft. long 2 ins.

Chains

sy. 12 ins. in the ground. marked
T. 35 N. S. 30 on N.E.
R. 11 W. S. 31 on S.E.
S. 36 on S.W. and
R. 12 W. S. 25 on N.W. faces with 1 notch on S. and 5 notches on N. edges.
Land. rolling and hilly.
Soil. sandy 2d. rate.

North bet. secs. 25 and 30.
Over hilly land.

7.85 Drain. 60 lks. wide. course N.E. in ravine 95 ft. deep. ascend.

11.00 Top of hills. bears E. and W. thence over rolling prairie.

40.00 Set a limestone 16×8×6 ins. 11 ins. in the ground. for 1/4 sec cor. marked 1/4 on W. face. dig pits 24×24×12 ins. N. and S. of stone 3 ft. dist. and raise a mound of earth 3½ ft. base. 1½ ft. high, W. of cor.

46.00 Drain 50 lks. wide. course N.E. in ravine 60 ft. deep.

80.00 S.W. cor. of field 200 lks. dist.
Set a sandstone 18×16×3 ins. 12 ins. in the ground for cor. of secs. 19. 24. 25. and 30. marked with 2 notches on S. and 4 notches on N. edges. dig pits 20×20×12 ins. in each sec. 5½ ft. dist and raise a mound of earth 4 ft. base 2 ft. high. W. of cor.
Land. rolling and hilly.
Soil. sandy 2d. and 3d. rate.

Chains

North bet. secs. 19 and 24.
Over rolling prairie.

6.75 Wagon road. bears N.E. and S.W.

8.00 House of E. Timmons. bears W. 8.00 chs. dist.

8.70 N.W. cor. field. bears E. 2.50 chs. dist.

14.75 Wire fence. bears E. and W.

16.00 House bears E. 12.00 chs. dist.

29.97 Wire fence. bears E. and W.

40.00 Deposit a marked stone 12 ins. in the ground for 1/4 sec. cor. dig pits 24×24×12 ins. N. and S. of cor. 4 ft. dist. and raise a mound of earth 3½ ft. base. 1½ ft. high over deposit.
In S. pit drive a stake 2 ft. long 2 ins. sq. 12 ins. in the ground. marked 1/4 S. on W. face.

58.83 Intersect the boundary line bet. S. Dakota and Nebraska at a point from which the 50th mile stone, which is a quartzite shaft 40×10×10 ins. above ground. firmly set. marked 50 M. on W. ~~face~~ S.D. on N. ~~face~~ and N. on S. faces bears W. 5.70 chs. dist.
Deposit a marked stone 12 ins. in the ground for closing cor. of Tps. 35 N. of Rs. 11 and 12 W.; dig pits 30×30×12 ins. E. W. and S. of cor. 5 ft. dist. and raise a mound of earth 5 ft. base 2½ ft. high over deposit.
In S. pit drive a stake 2 ft. long 2 ins. sq. 12 ins. in the ground. marked
C.C. on S.
T. 35 N. on N.
R. 11 W. S. 19 on E. and
R. 12 W. S. 24 on W. faces. with 6 grooves on E. and W. faces.
Land, rolling prairie.
Soil, sandy loam 2d. rate.

Aug. 15th, 1895.

On investigation I find it impossible to make the surveys in fractional townships 34 N. Ranges 10 and 11 W. within the abandoned Fort Randall Military reservation continuous with those established in the same townships already closed on the reservation boundary.
I accordingly apply the instructions of the surveyor general, dated July 10th 1894. and establish the exterior of the stated town=ships in the following manner.
From the established closing cor. of secs. 25 and 30. township 34 N. Ranges 10 and 11 W. on the boundary line of the abandoned Fort Randall Military reservation. I run and temporarily mark a blank line, due north between said ranges; and from the established closing cor. of Secs. 6 and 31 on N. bdy. of T. 34 N. R. 11 W. I run and temporary mark a blank line, due east along the north boundary of said township; and at the intersection of the two blank lines, run as stated. I establish the cor. of townships 34 and 35 N. Ranges 10 and 11 W. as follows.
Set a sandstone 20×18×8 ins. 15 ins. in the ground for cor. of Ts. 34 and 35 N. Rs. 10 and 11 W. marked with 6 notches on each edge. dig pits 30×30×12 ins. on each line N. E. and W. of stone 4 ft. and S. 8 ft. dist. and raise a mound of earth 5 ft. base 2½ ft. high S. of cor.
From the corner of Ts. 34 and 35 N. Rs. 10 and 11. W. established as just described I run and establish the four township exteriors, meeting at this common cor. due south, due north, due east, and due west, respectively in the manner now to be described.

Aug 6th. On the meridian established from

Chains

Polaris Aug 7d. near the cor. of secs. 7. 12. 13 and 18, on the E. bdy of Tp. 34 N. R. 11 W., latitude 42°56' N. Longitude 98°32' W, recorded in the field notes of the survey of the abandoned Fort Randall Military reservation boundary, At 5h 30m p.m. l.m.t. I set off 42°56' N. on the lat. arc and 16° 37' N. on the decl. arc, and test the adjustment of my solar, and find it gives the same meridian.
Aug. 7th. At 5h 45m a.m. l.m.t. I set off 42°56' on the lat. arc, and 16°30' N. on the decl. arc, and find it gives the same meridian as before.
The solar apperatus therefore defines the true meridian by p.m. and a.m. observation, and the adjustment as correct.
Aug. 7th. At 7h a.m. l.m.t. I set off 42°57.5' on the lat. arc, and 16°27' N. on the decl. arc, and determine a true meridian at the cor. of Tps. 34 and 35 N. Rs. 10 and 11 W. with the solar.
The magnetic bearing of the true meridian at 7h a.m. is N. 12°03' W. the angle thus determined reduced by the table, page 100, gives the mean mag. decl. 11°57' E.
From the above described Tp. cor. I run
South bet. secs. 1 and 6.
Ascending 60 ft.
4.00 Top of ridge, bears E. and W. thence descend to drain.
24.05 Foot, and drain, 25 lks. wide. course N.E. thence ascend 90 ft.
30.35 Top of hills. bears E. and W. thence over rolling prairie. Enter field. bears E. and W.
35.28 Leave field. bears E. and W.
40.00 Set a sandstone 17×11×5 ins. 12 ins. in the ground, for 1/4 Sec. cor. marked 1/4 on W. face

Chains

dig pits 24 x 24 x 12 ins. N. and S. of stone 3 ft. dist. and raise a mound of earth 3½ ft. base, 1½ ft. high. W. of cor.

44.30 Enter field. bears E. and W.

57.90 House of W.E. Ballard bears E. 3.50 chs. dist.

58.27 Leave field. bears E. and W.

58.37 Wagon road. bears E. and W.

58.45 Wire fence. bears E. and W. thence in pasture.

77.90 Drain, 30 lks. wide, course E. in ravine 70 ft. deep. Scattering trees along the drain.

79.65 Wire fence, bears E. and W. leave pasture.

80.00 Deposit a marked stone 12 ins. in the ground for cor. of secs. 1, 6, 7 and 12. dig pits 20 x 20 x 12 ins. in each sec. 5½ ft. dist. and raise a mound of earth 4 ft. base, 2 ft. high over deposit.

In S.E. pit drive a stake 2 ft. long 2 ins sq. 12 ins. in the ground, marked

T. 34 N., S. 6 on N.E.

R. 10 W., S. 7 on S.E.

S. 12 on S.W. and

R. 11 W., S. 1 on N.W. faces. with 1 notch on N. and 5 notches on S. edges.

Land, very hilly to rolling.

Soil, 2d. and 3d. rate.

South bet. secs. 7 and 12.

Ascending 60 ft.

11.83 Top of hills, and Wagon road. bears E. and W.

Thence over rolling prairie.

12.00 Enter field, near N.E. cor. bears W. and S.

40.00 In field, near E. edge.

Set a sandstone 16 x 12 x 5 ins. 11 ins. in the ground for ¼ Sec. cor. marked ¼ on W. face. dig pits 24 x 24 x 12 ins. N. and S. of stone 3 ft. dist. and raise a mound of earth 3½ ft. base, 1½ ft. high, W. of cor.

Chains

41.30 Leave field. near S.E. cor. bears E. and W.

41.47 Wagon road. bears E. and W.

41.52 Wire fence. bears E. and W. thence in pasture.

65.20 Wire fence, near S.E. cor. bears N. and N.W.

67.90 Drain, 25 lks. wide. course E.

71.60 Wire fence, bears E. and W. thence in pasture.

79.95 Wire fence, near S.E. cor. bears E. and W.

80.00 Set a sandstone 22 x 12 x 3 ins. 16 ins. in the ground for cor. of secs. 7, 12, 13 and 18. marked with 2 notches on the N. and 4 notches on the S. edges. dig pits 20 x 12 x 12 ins. in each sec. 5½ ft. dist. and raise a mound of earth 4 ft base, 2 ft high, W. of cor.

Land, hilly and rolling.

Soil, sandy loam, 2d. rate.

House of Jacobson, bears N. 75° W. 14.00 chs. dist.

South bet. secs. 13 and 18.

Over rolling prairie.

0.40 Wagon road. bears E. and W.

0.80 N.W. cor. of field. bears E. 1.25 chs. dist. bears E. and S.

39.00 House of A. Anderson bears W. 18.00 chs. dist. and S.W. cor. of field. bears E. 1.00 ch. dist. extends E. and N.

40.00 Set a sandstone 14 x 12 x 3 ins. 9 ins. in the ground for ¼ Sec. cor. marked ¼ on W. face dig pits 24 x 24 x 12 ins. N. and S. of stone 3 ft. dist. and raise a mound of earth 3½ ft. base, 1½ ft. high, W. of cor. N.W. cor. of field. bears E. 1.00 ch. dist. extends E. and S.

40.69 Wagon road, bears E. and W. N.W. cor. of field extends E. and S.

80.00 Set a sandstone 18 x 10 x 3 ins. 12 ins. in the ground for cor. of secs. 13, 18, 19 and 24. marked with 3 notches on N. and S. edges. dig pits

Chains

20x20x12 ins. in each sec. 5½ ft. dist. and raise a mound of earth 5½ ft. base, 2 ft. high W. of cor.
Land, rolling prairie.
Soil, sandy loam, 2d. rate.

South bet. secs. 19 and 24,
Over rolling prairie.
0.35 Wagon road, bears N.W. and E. and S.W. cor. of field, bears E. 1.00 ch. dist.
1.45 Enter N.W. cor. of field, bears S. and E.
17.75 Leave field at S.W. cor.
40.00 Set a sandstone 15x14x3 ins. 10 ins. in the ground for ¼ sec. cor. marked ¼ on W. face. dig pits 24x24x12 ins. N. and S. of stone 3 ft. dist. and raise a mound of earth 3½ ft. base, 1½ ft. high, W. of cor.
43.00 Drain, 15 lks. wide. course S.E.
63.45 Drain, 15 lks. wide, course E. ascend hills.
67.00 Top of hills. bears E. and W. descend 60 ft. to creek valley.
House of John Hedlund. bears E. 13.00 chs. dist.
75.90 Foot of hills. bears N.E. and S.W. enter creek valley, and
Wagon road. bears N.E. and S.W.
76.45 S.W. cor. of field. bears E. 1.50 chs. dist. extends E. and N.E.
80.00 Set a sandstone 16x14x8 ins. 11 ins. in the ground. for cor. of secs. 19, 24, 25 and 30. marked with 4 notches on the N. and 2 notches on the S. edges. dig pits 20x20x12 ins. in each sec. 5½ ft. dist. and raise a mound of earth 4 ft. base, 2 ft. high W. of cor.
Land, rolling and hilly.
Soil, sandy loam, 2d. rate.

Chains

South bet. track. secs. 25 and 30.
Over hilly land
0.30 Silver creek, dry, 25 lks. wide, course E. cross and ascend brush bank 40 ft. high. bears E. and W.
1.70 Top of bank. bears E. and W. thence over hilly prairie.
8.60 Drain, 25 lks. wide. course N.E.
31.90 N.W. cor. of field. 20 lks. E. extends E. and S.
37.00 House of C.U. Johnson. bears E.
40.00 Set a sandstone 26x10x10 ins. 19 ins. in the ground for ¼ sec. cor. marked ¼ on W. face, dig pits 24x24x12 ins. N. and S. of stone 3 ft. dist. and raise a mound of earth 3½ ft. base, 1½ ft. high, W. of cor.
48.25 S.W. cor. of field. extends N. and E.
53.86 Wagon road. bears N.E. and S.W.
Tps. 34 N., Rs. 10 and 11 W.
57.70 The closing cor. of secs. 25 and 30, on S.W. bdy. of the abandoned Fort Randall military reservation, which is a stone 10x8x4 ins. above ground, marked and witnessed as described by the surveyor general. 7.73 chs. N. 5° 36' W. of the 6½ mile cor.
Land, rolling prairie,
Soil, sandy loam 2d. rate.
House of C.U. Johnson bears N. 20° E.

Aug. 7th 1895.

Boundaries of T.34 N. R.11 W.

Latitudes, departures and closing errors.

Lines designated	True bearing	Distance Chs	Latitudes N.	Latitudes S.	Departures E.	Departures W.
E. Bdy.	North.	377.70	377.70			
N. "	West.	476.36				476.36
S. & W. "	S. 5° 36' E.	608.40		377.88	476.80	
						26
Convergency			377.70	377.88	476.80	476.62
				377.70	476.62	
Closing errors.				0.18	0.18	

General description.

The surface is rolling prairie, with a sandy loam soil. Thickly settled, and well cultivated. The post office of Gross is located in the S.E. ¼ of sec 2. C.H. Bates, U.S. Dept. Survyr.

14 North boundary T. 34 N., R. 11 W. of the 6th. P.M.

Chains	
	From the established cor. of Tps. 34 and 35 N. Rs. 10 and 11 W.
	I run
	West bet. secs. 1 and 36.
	Over mountainous land.
4.00	Top of ridge, bears N. and S. thence descend 100 ft.
33.20	Foot, and drain 20 lks. wide. course N.E. thence ascend 200 ft.
40.00	Deposit a marked stone 12 ins. in the ground for 1/4 sec. cor. dig pits 24×24×12 ins. E. and W. of cor. 4 ft. dist. and raise a mound of earth 3½ ft. base, 1½ ft. high over deposit.
	In E. pit drive a stake 2 ft. long, 2 ins. sq. 12 ins. in the ground. marked 1/4 S. on N. face.
52.00	Top of ridge, bears N.E. and S.W. thence descend 100 ft.
64.10	Foot, and drain, 25 lks. wide, course N. thence ascend 150 ft.
79.00	Top of ridge. bears N.E. and S.W. thence descend.
79.85	Wagon road. bears N.E. and S.W. along ridge
80.00	Set a sandstone 16×12×5 ins. 11 ins. in the ground for cor. of secs. 1. 2. 35 and 36. marked with 1 notch on the E. and 5 notches on the W. edges. dig pits 20×20×12 ins. in each sec. 5½ ft. dist. and raise a mound of earth 4 ft. base 2 ft. high N. of cor.
	Land. mountainous
	Soil. gumbo 3d. rate.
	Mountainous land 80.00 chs.

North boundary T. 34 N., R. 11 W. of the 6th. P.M. 15

Chains.	
	West bet. secs. 2 and 35.
	Over mountainous land, descending.
18.25	Foot. and drain 20 lks. wide. course N.E. Scattering trees and brush along drain. thence ascend 80 ft.
26.50	Top of ridge. bears N.E. and S.W. thence descend 70 ft.
33.40	Foot. and drain. 35 lks. wide. course N.E. ascend.
40.00	Deposit a marked stone 12 ins. in the ground for 1/4 sec. cor. dig pits 24×24×12 ins. E. and W. of cor. 4 ft. dist. and raise a mound of earth 3½ ft. base. 1½ ft. high over deposit.
	In E. pit drive a stake 2 ft. long 2 ins. sq. 12 ins. in the ground. marked 1/4 S. on N. face.
48.50	Top of hills. bears N. and S. thence over high rolling prairie.
56.32	Wagon road. bears N. and S.
58.11	Wagon road. bears N.E. and S.W.
58.90	Enter field near S.E. cor. extends N. and W.
70.52	Leave field. at S.W. cor. extends N.
70.62	Wagon road. bears N.W. and S.E.
71.45	House of J. N. McWright bears N. 2.50 chs. dist.
80.00	Set a sandstone 15×13×3½ ins. 10 ins. in the ground for cor. of secs. 2. 3. 34 and 35. marked with 2 notches on the E. and 4 notches on the W. edges. dig pits 20×20×12 ins. in each sec. 5½ ft. dist. and raise a mound of earth 4 ft. base, 2 ft. high N. of cor.
	Land. high rolling and mountainous.
	Soil. 2d. and 3d. rate.
	Mountainous land 48.50 chs.

16 North boundary T. 34 N., R. 11 W. of the 6th P.M.

Chains.

West bet. secs. 3 and 34.
Over rolling prairie.
11.50 Drain, 50 lks. wide, course N. Vacant house 4.00 chs. S. of line.
12.00 Enter N.E. cor. of field, extends W. and S. thence along N. edge of same.
38.00 N.W. cor. of field, leave same.
40.00 Deposit a marked stone 12 ins. in the ground for 1/4 sec. cor. dig pits 24x24x12 ins. E. and W. of cor. 4 ft. dist. and raise a mound of earth 3½ ft. base, 1½ ft. high over deposit
In E. pit drive a stake 2 ft. long 2 ins sq. 12 ins. in the ground, marked 1/4 S. on N. face.
50.25 N.E. cor. of field, bears S. 80 lks. dist.
58.00 House of R. Murray bears N. 3.00 chs. dist.
66.30 S.E. cor. of field, bears N. 1.00 ch. dist.
76.65 S.W. cor. of field, bears N. 1.00 ch. dist.
80.00 Set a sandstone 14x10x4 ins. 9 ins. in the ground for cor. of secs. 3. 4. 33 and 34, marked with 3 notches on the E. and W. edges, dig pits 20x20x12 ins. in each sec. 5½ ft. dist. and raise a mound of earth 4 ft. base 2 ft. high, N. of cor.
Land, rolling prairie.
Soil, sandy loam 2d. rate.
N.W. cor. of field, bears S. 60 lks. dist.
House of F.E. Roach bears S. 35° W.

West bet. secs. 4 and 33.
Over rolling prairie.
0.90 Wagon road, bears N. and S.
S.E. cor. of field, bears N. 2.00 chs. dist.
26.15 S.W. cor. of field, bears N. 50 lks. dist.
28.50 House of J.J. Blair, bears N. 6.00 chs. dist.
29.50 Wagon road, bears N. and S.

5 North boundary T. 34 N., R. 11 W. of the 6th P.M. 17

Chains.

29.60 S.E. cor. of wire fence, extends N. and W.
40.00 Deposit a marked stone 12 ins. in the ground for 1/4 sec. cor. dig pits 24x24x12 ins. E. and W. of cor. 4 ft. dist and raise a mound of earth 3½ ft. base 1½ ft high over deposit.
In E. pit drive a stake 2 ft. long 2 ins. sq. 12 ins. in the ground, marked 1/4 S. on N. face.
59.68 S.W. cor. Wire fence
59.92 Wagon road, bears N. and S.
78.60 Wagon road, bears N.E. and S.W.
80.00 Set a sandstone 15x13x5 ins. 10 ins. in the ground for cor. of secs. 4. 5. 32 and 33, marked with 4 notches on the E. and 2 notches on the W. edges, dig pits 20x20x12 ins. in each sec. 5½ ft. dist. and raise a mound of earth 4 ft. base, 2 ft. high, N. of cor.
Land, rolling prairie
Soil, sandy loam 2d. rate.
House of P.R. Moore bears S.58° E. 12.00 chs. dist.

West bet. secs. 5 and 32.
Over rolling prairie.
0.80 N.E. cor. field, bears S. 1.00 chs. dist.
25.00 Wagon road, bears N. and S.
26.00 S.E. cor. of field, bears N. 40 lks. dist.
40.00 Deposit a marked stone 12 ins. in the ground for 1/4 sec. cor. dig pits 24x24x12 ins. E. and W. of cor. 4 ft. dist. and raise a mound of earth 3½ ft. base 1½ ft. high over deposit.
In E. pit drive a stake 2 ft. long 2 ins. sq. 12 ins. in the ground, marked 1/4 S. on N face.
House, bears N.40° E. 10.00 chs. dist.
House, bears North 8.00 chs. dist.

18 North boundary T.34 N., R.11 W. of the 6th. P.M.

Chains

41.62 S.W. cor. fmd. bears N. 40 lks. dist.
45.50 Top of hills. bears N. and S. Enter broken hilly country. descend.
70.70 Foot. and drain, 60 lks. wide. course N.W.
80.00 Set a sandstone 18x12x5 ins. 10 ins. in the ground for cor. of secs. 5.6.31 and 32. marked with 5 notches on the E. and 1 notch on the W. edges. dig pits 20x20x12 ins. in each sec. 5½ ft. dist. and raise a mound of earth 4 ft. base 2 ft. high N. of cor.
Land, rolling and hilly.
Soil. sandy 2d. and 3d. rate.

West bet. secs. 6 and 31,
Over broken hilly land,
0.40 Drain. 60 lks. wide. course N.
1.35 Drain. 40 lks. wide. course N.
11.25 Drain. 80 lks. wide. course N.
23.00 Drain. 100 lks. wide. course N. ascend
40.00 Top of hills. bears N.W. and S.E. leave broken country. thence over rolling prairie.
Deposit a marked stone 12 ins. in the ground for 1/4 sec. cor. dig pits 24x24x12 ins. E. and W. of cor. 4 ft. dist. and raise a mound of earth 3½ ft. base 1½ ft. high over deposit.
In E. pit drive a stake 2 ft. long 2 ins. sq. 12 ins. in the ground. marked 1/4 S. on N. face.
59.40 Drain. 35 lks. wide. course S.W.
64.20 Wagon road. bears N.W. and S.E.
65.00 N.E. cor. fmd. bears S. 80 lks. dist.
76.36 The closing cor. of tract. secs. 6 and 31 on the S.W. bdy of the abandoned Ft. Randall reservation. whereon is a stone 12x6x4 ins above ground. firmly set. and marked and witnessed as described by the Surveyor General.

North boundary T.34 N., R.11 W. of the 6th. P.M. 19

Chains

79.12 The cor. of Ts. 34 and 35 N. Rs. 11 and 12 W.
Land, hilly and rolling.
Soil, sandy 2d. and 3d. rate.
Aug. 7th. 1895.

East boundary T.35 N., R.11 W. of the 6th. P.M.

Aug. 8th. At 6h 30m a.m. l.m.t. I set off 42° 57'.5 on the lat arc, and 16° 11' N. on the decl. arc, and determine a true meridian with the solar at the cor. of Ts. 34 and 35 N. Rs. 10 and 11 W. heretofore described.
Thence I run
North bet. secs. 31 and 36.
Descending mountainous land
25.65 Foot. and drain. 25 lks. wide. course E.
Thence ascend 300 ft. Brush in the lands.
40.00 E. point of ridge extending N.W.
Deposit a marked stone 12 ins. in the ground for 1/4 sec. cor. dig pits 24x24x12 ins. N. and S. of cor. 4 ft. dist. and raise a mound of earth 3½ ft. base. 1½ ft high over deposit.
In S. pit drive a stake 2 ft. long 2 ins. sq. 12 ins. in the ground. marked 1/4 S. on N. face.
Descend to drain.
44.30 Drain 100 lks. wide. course S.E. thence ascend
58.70 Top of ridge. near S.E. point. extends N.W. descend to drain.
69.00 Foot. and drain. 60 lks. wide. course S.E. ascend.

78.00 Top of ridge, on E. slope, thence descend.
80.00 Set a sandstone 18x12x3 ins. 12 ins. in the ground for cor. of Secs. 25, 30, 31 and 36, marked with notch on S. and 5 notches on N. edges. dig pits 20x20x12 ins. in each sec. 5½ ft. dist. and raise a mound of earth 4 ft. base 2 ft. high, W. of cor.
Land, mountainous.
Soil, gumbo 3d. rate.
Mountainous land 80.00 chs.

North bet. Secs. 25 and 30.
Over mountainous land, descending.
4.40 Foot. and drain, 25 lks. wide, course S.E. thence ascend 100 ft.
16.00 Top of ridge, bears E. and W., near E. point. thence descend over ridges.
40.00 Deposit a marked stone 12 ins. in the ground for ¼ Sec. cor. dig pits 24x24x12 ins. N. and S. of cor. 4 ft. dist. and raise a mound of earth 3½ ft. base 1½ ft. high over deposit.
In S. pit drive a stake 2 ft. long, 2 ins. sq. 12 ins. in the ground, marked ¼ S. on W. face.
52.50 Foot. and drain, 50 lks. wide, course S.E. Brush in bunds, thence ascend 175 ft.
58.18 Wagon road, bears S.E. and N.W.
73.00 Top of ridge, bears E. and W., descend.
80.00 Set a sandstone 16x14x3 ins. 11 ins. in the ground for cor. of Secs. 19, 24, 25 and 30, marked with 2 notches on S. and 4 notches on N. edges. dig pits 20x20x12 ins. in each sec. 5½ ft. dist. and raise a mound of earth 4 ft. base, 2 ft. high, W. of cor.
Land, mountainous.
Soil, gumbo 3d. rate.
Mountainous land 80.00 chs.

Chains

North bet. fract. Secs. 19 and 24.
Over mountainous land, descending.
22.00 Foot. and drain, 60 lks. wide, course E. in brush ravine, thence ascend 250 ft.
40.00 Deposit a marked stone 12 ins. in the ground for ¼ Sec. cor. dig pits 24x24x12 ins. N. and S. of cor. 4 ft. dist. and raise a mound of earth 3½ ft. base, 1½ ft. high over deposit.
In S. pit drive a stake 2 ft. long 2 ins. sq. 12 ins. in the ground, marked ¼ S. on N. face.
51.00 Top of ridge, bears E. and W., descend.
60.29 Intersect boundary line bet. S. Dakota and Nebraska, at a point from which the 56th. mile stone, which is a quartzite shaft 40x10x10 ins. above ground, firmly set, marked 56 M. on W., S.D. on N. and N. on S. faces, bears West 7.44 chs. dist.
Deposit a marked stone 12 ins. in the ground for closing cor. of fract. Secs. 19 and 24, Tp. 35 N. Rs. 10 and 11 W. dig pits 30x30x12 ins. (crossing meach line) S. E. and W. of cor. 5 ft. dist. and raise a mound of earth 5 ft. base 2½ ft high over deposit.
In E. pit drive a stake 2 ft. long, 2 ins. sq. 12 ins. in the ground, marked
C.C. T.35 N. on S.
R.10 W. S.19 on E. and
R.11 W. S.24 on W. faces, with 6 ~~notches~~ grooves on E. and W. faces.
Land, mountainous
Soil, gumbo 3d. rate.
Mountainous land 60.29 chs.
Aug. 8th. 1895.

---

22 East boundary T.35 N., R.11 W. of the 6th P.M.

Boundaries of T.35 N. R.11 W.

Latitudes, departures, and closing errors.

Lines designated	True bearing.	Distance Chs.	Latitudes. N.	Latitudes. S.	Departures. E.	Departures. W.
N. Bdy.	North.	218.83	218.83			
N. "	East.	481.74			481.74	
E "	South.	220.29		220.29		
S "	West	479.12				479.12
Convergency.					0.31	
			218.83	220.29	482.05	479.12
				218.83	479.12	
	Closing errors.			1.46	2.93	

General description.

The larger portion of this fractional township is very rough and broken. Along the southern boundary there is considerable rolling land, on which there are several settlers.

Charles H. Bates.
U.S. Deputy Surveyor.

Aug 8th. At the cor. of townships 34 and 35 N. ranges 10 and 11 W. I set off 16° 05' N. on the decl. arc; and at 0h 5m p.m. l.m.t. observe the sun on the meridian the resulting latitude is 42° 57'.5 which is 0'.1 less than the proper latitude.

The latitude and longitude of the cor. of townships 34 and 35 N. ranges 10 and 11 W. G offer on the plat is.
Latitude. 42° 58' N.
Longitude. 98° 33' W.

North boundary T.34 N., R.10 W. of the 6th P.M.

Chains.

Aug. 8th. At 2h 15m p.m. l.m.t. I set off 42° 57'.5 on the lat. arc. and 16° 03'.4 on the decl. arc. and determine a true meridian with the solar at the cor. of Tps. 34 and 35 N. Rs. 10 and 11 W.
Thence I run
East bet. Secs. 6 and 31.
Over mountainous land descending 200 ft.
21.10 Foot, and drain 40 lks. wide. course N. in bush ravine. ascend 225 ft.
40.00 Top of hills. leave mountainous land thence over rolling prairie.
Deposit a marked stone 12 ins. in the ground for 1/4 Sec. cor. dig pits 24x24x12 ins. E. and W. of cor. 4 ft. dist. and raise a mound of earth 3 1/2 ft. base. 1 1/2 ft high over deposit.
In E. pit drive a stake 2 ft. long 2 ins. sq. 12 ins. in the ground. marked 1/4 S. on N. face.
67.24 Wagon road. bears N.E. and S.W.
80.00 Set a sandstone 16x12x3 ins. 11 ins. in the ground for cor. of Secs. 5.6.31 and 32. marked with 1 notch on W. and 5 notches on E. edges. dig pits 20x20x12 ins. in each sec. 5 1/2 ft. dist. and raise a mound of earth 4 ft. base 2 ft. high N. of cor.
Land. mountainous and rolling
Soil. 2d. and 3d. rate.
Mountainous land 40.00 Chs.

East bet. Secs. 5 and 32.
Over rolling prairie.
4.36 Enter field, bears N. and S.
24.46 Leave field. bears N. and S. Top of hill descend. hilly and broken land.
33.50 Foot. and drain. 40 lks. wide. course S.E.

Chains.

in hills 100 ft. high. thence ascend

40.00 Deposit a marked stone 12 ins. in the ground for 1/4 Sec. cor. dig pits 24 x 24 x 12 ins. E. and W. of cor. 4 ft. dist. and raise a mound of earth 3 1/2 ft. base 1 1/2 ft. high over deposit.

In E. pit drive a stake 2 ft. long 2 ins. sq. 12 ins. in the ground. marked 1/4 S. on N. face.

57.00 Top of ridge. bears S.E. and N.W. thence descend Missouri river bluffs.

72.50 Drain. 30 lks. wide. course S.E. in high hills.

76.00 Same drain. 30 lks. wide. course N.E.

80.00 Set a sandstone 15 x 8 x 6 ins. 10 ins. in the ground for cor. of Secs. 4, 5, 32 and 33. marked with 2 notches on W. and 4 notches on E. edges. dig pits 20 x 20 x 12 ins. in each Sec. 5 1/2 ft. dist. and raise a mound of earth 4 ft. base, 2 ft. high N. of cor.

Land. very hilly and broken

Soil. sandy 2d. and 3d. rate.

East bet. Secs. 4 and 33.

Over high hills.

1.00 Drain, 25 lks. wide. course S.E.

19.50 Drain, 75 lks. wide. course S.E.

40.00 Deposit a marked stone 12 ins. in the ground for 1/4 Sec. cor. dig pits 24 x 24 x 12 ins. E. and W. of cor. 4 ft. dist. and raise a mound of earth 3 1/2 ft. base, 1 1/2 ft. high over deposit.

In E. pit drive a stake 2 ft. long, 2 ins. sq. 12 ins. in the ground. marked 1/4 S. on N. face.

80.00 Set a sandstone 12 x 10 x 5 1/2 ins. 8 ins. in the ground for cor. of Secs. 3, 4, 33 and 34, marked with 3 notches on E. and W. edges. Raise a

Chains.

a mound of stone 2 1/2 ft. base, 2 ft. high N. of cor. Pits impracticable.

Land. broken and hilly.

Soil. gumbo. 3d. rate.

East bet. Secs. 3 and 34.

Descending to Missouri river.

28.50 Top of bank, 60 ft. above river.

Set a granite boulder 26 x 16 x 12 ins. 19 ins. in the ground for witness meander cor. of prod. secs. 3 and 34. marked W.C. M.C. on E. face, and raise a mound of stone 2 ft. base 1 1/2 ft. high W. of cor.

Pits impracticable.

29.50 Mean high water mark of the Missouri river. and true point for meander cor. when permanent cor. cannot be built.

Land. hilly.

Soil. sandy 3d. rate.

Aug. 8th. 1895.

Boundaries of T. 35 N., R. 10 W.

Latitudes, and departures, and closing errors.

Lines designated	True bearing	Distance. Chs.	Latitudes. N.	Latitudes. S.	Departures. E.	Departures. W.
W. Bdy.	North.	220.29	220.29			
N. Bdy.	East.	80.21			80.21	
E. Bdy. Sec. 19.	S. 0° 1' W.	60.20		60.20		0.02
S. " " 20.	S. 89° 54' E.	80.14		0.13	80.14	
E " " 29.	S. 0° 2' W.	80.00		80.00		0.05
E " " 32.	S. 0° 2' W.	80.00		80.00		0.04
S. Bdy.	West.	160.00				160.00
Convergency.					0.09	
			220.29	220.33	160.44	160.11
				220.29	160.11	
	Closing errors.			0.04	0.33	

28 North Boundary T. 34 N., R. 10 W. of the 6th. P.M.

General description.

The surface of fractional Tps. 34 and 35 R. 10, situated within the abandoned Fort Randall military reservation is mostly very rough and broken. In the southern part of Tp. 34 N., R. 10 W. the land is rolling prairie. There are a number of settlers on the rolling lands.

Charles H. Bates,
U.S. Deputy Surveyor.

In explanation of the large closing errors in the preceding traverse of the boundaries of T. 35 N., R. 11 W., I refer to the traverses of Tps. 90 N., Rs. 65 and 66 W. 5th. P.M. in South Dakota closing to the state boundary line, surveys executed by me under this contract which show a like condition of that boundary to that indicated by the stated traverse, and that my surveys north of the state boundary are consistent in their closings to the same, with my surveys south, having due regard to the varying character of the lands.

Charles H. Bates,
U.S. Deputy Surveyor.

List of Names.

A list of the names of the individuals employed by .....
....., U. S. Deputy Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of the .....
....., showing

Final Oaths of Deputy Surveyors and their assistants

LIST OF NAMES. 303

A list of the names of the individuals employed by Charles H. Bates, U. S. Deputy Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of the north boundary of Tps. 34 N., Rs. 10 and 11 W., the east boundary of Ts. 34 and 35 N., R. 11 W., the east and west boundaries of T. 35 N., R. 12 west of the ~~fifth~~ Sixth principal meridian, in the ~~Territory of Dakota~~ State of Nebraska, showing puty Surveyor, in surveying all the respective capacities in which they acted:

Jim Burns.	Chainman.
E. N. Hinsdale.	Chainman.
A. M. Fox.	Moundman.
E. R. Cook.	Moundman.
C. H. Armstrong.	Moundman.
H. M. Finotti.	Moundman.
C. Wright.	Flagman & M.

, as are represented in the
at said survey has been in all
corner monuments established,

Subscribed and sworn to before me this .....
day of ....., 18 .

SEAL

6—161

FINAL OATHS OF ASSISTANTS.

We hereby certify that we assisted Charles H. Bates, U. S. Deputy Surveyor, in surveying all those parts or portions of the north boundary of Tps. 34 N., R. 10 and 11 W., the east boundary of Tps. 34 and 35 N. R. 11 W., the east and west boundaries of T. 35 N. R. 12

west of the ~~fifth~~ sixth principal meridian, in the State of Nebraska ~~Territory of Dakota~~, ~~as~~ which are represented in the foregoing field notes as having been surveyed by him and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established according to the instructions furnished by the U. S. Surveyor General for South Dakota.

Tim Burns	Chairman
E. W. Hinsdale	Chairman
C. H. Armstrong	Moundman
H. M. Pinott	Moundman
E. R. Cook	Moundman
A. Tiffe Fry	Moundman
G. Wright	Flagman & moundman

Subscribed and sworn to before me this 6" day of Oct, 1895

B. H. Wolley
Notary Public

FINAL OATH OF U. S. DEPUTY SURVEYOR.

I, Charles H. Bates U. S. Deputy Surveyor, do solemnly swear that in pursuance of ~~instructions~~ a contract received from Richard B. Hughes, U. S. Surveyor General for South Dakota, bearing date of the 28th day of March, 1895, I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the U. S. Surveyor General for South Dakota, the manual of surveying ~~manual~~ instructions, and the laws of the United States, surveyed the north boundary of Tps. 34 N., Rs. 10 and 11 W., the east boundary of Ts. 34 and 35 N., R. 11 W., the east and west boundaries of Tp. 35 N., R. 12

west of the ~~fifth~~ sixth principal meridian, in the ~~Territory of Dakota~~ State of Nebraska, ~~as~~ which are represented in the foregoing field notes as having been surveyed by me and under my directions; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the manual of surveying ~~manual, printed~~ instructions, and the special written instructions of the U. S. Surveyor General for South Dakota, and in the specific manner described in the field notes, and that the foregoing are the ~~true~~ original field notes of such survey, and should any fraud be detected I will suffer the penalty of perjury under the provisions of an act of Congress, approved August 8, 1846. Said field notes are contained in one book lettered "A"

Charles H. Bates
U. S. Deputy Surveyor.

Subscribed by said Charles H. Bates U. S. Dep. Sur. and sworn to before me this 17th day of Dec, 1895

J. T. Binnt
Clerk of the Circuit Court within and for Yankton County, S. Dakota

Subscribed and sworn to before me this _____ day of _____, 18 .

SEAL

6—151

List of Names.

A list of the names of the individuals employed by _____, U. S. Deputy Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of the _____, showing

S. Deputy Surveyor, in surveying all

_____, as are represented in the

and that said survey has been in all

and the corner monuments established,

APPROVAL.

U. S. Surveyor General's Office,

Huron, ~~D. T.~~ S. D., July 11, 1896.

The foregoing field notes ~~of the survey of~~ contained in One Book lettered "A" of the Survey of the North boundary of Tps. 34 N. Rs. 10 and 11 W.. The East boundary of Tps 34 and 35 N. R. 11 W, and the East and West boundaries of Tps 35 N. R. 12

west of the ~~fifth~~ Sixth principal meridian, in ~~Dakota Territory~~ the State of Nebraska, executed by Charles N. Bates

under his contract No 106 dated March 28th, 1895, ~~in the month of~~ _____, ~~188~~, having been critically examined, the necessary corrections and explanations made, the said field notes and the surveys they describe are hereby approved.

Richard B. Hughes
U. S. Surveyor General.

13962—400

List of Names.

A list of the names of the individuals employed by _____, U. S. Deputy Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of the _____ Meridian, in _____, showing the respective capacities in which they acted:

Final Oath of Assistants:

We hereby certify that we assisted _____, U. S. Deputy Surveyor, in surveying all those parts or portions of the _____ Meridian, _____, as are represented in the foregoing field notes as having been surveyed by him and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the U. S. Surveyor General for _____

Subscribed and sworn to before me this _____
day of _____, 18 .

SEAL

6—151

Final Oath of U. S. Deputy Surveyor.

I, ..., U. S. Deputy Surveyor, do solemnly swear that, in pursuance of instructions received from ....., U. S. Surveyor General for ....., bearing date of the .....day of ....., 18 , I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the U. S. Surveyor General for ....., the surveying manual, and the laws of the United States, surveyed all those parts or portions of .....

.....

.....

.....

.....

.....Meridian, in the....., as are represented in the foregoing field notes as having been surveyed by me, and under my directions; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the surveying manual, printed instructions, the special written instructions of the U. S. Surveyor General for..... and in the specific manner described in the field notes, and that the foregoing are the true field notes of such survey; and should any fraud be detected, I will suffer the penalty of perjury under the provisions of an Act of Congress approved August 8, 1846.

.....

U. S. Deputy Surveyor.

Subscribed and sworn to before me this .....
day of ....., 18 .

SEAL

.....

.....

Approval.

Office of the U. S. Surveyor General,

....., *18* .

The foregoing field notes of the survey of.....

.....

.....

.....

.....

.....

.....

.....executed by

.....

under his Contract No....., dated....., 18 , having been critically examined, the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

.....

U. S. Surveyor General.

I certify that the foregoing transcript of the field notes of the above-described surveys in ...., has been correctly copied from the original notes on file in this office.

.....

U. S. Surveyor General.

Hughes, Surv Genl.

Rec'd with letter of R. B. Hughes, Surv. Genl. So. Dak. of Feb 8, 1897

(4—679.)

BOOK A.

FIELD NOTES

OF THE SURVEY OF

the

West Boundaries

of

Townships No. 35 North

of

Ranges No's. 13 14 15

17 18 19 and 20 West

Of the 6th Principal Meridian,

in the State of

Nebraska.

AS SURVEYED BY

Robert Harry Jr. & Alfred W. Gumaer, United States Deputy Surveyor,

Under ~~his~~ their joint Contract No. 107, dated April 3rd, 1895.

Survey commenced June 29th, 1895.

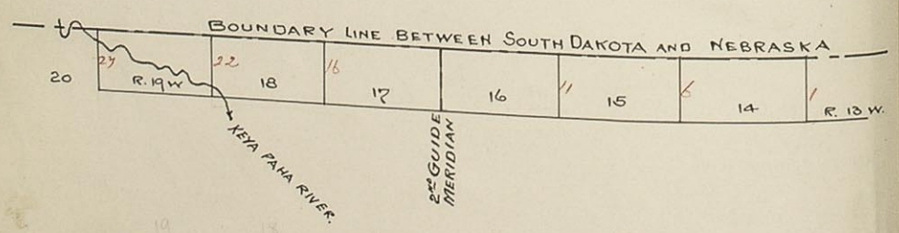
Survey completed August 9th, 1895.

(1319—2,500.)

Names and Duties of Assistants.

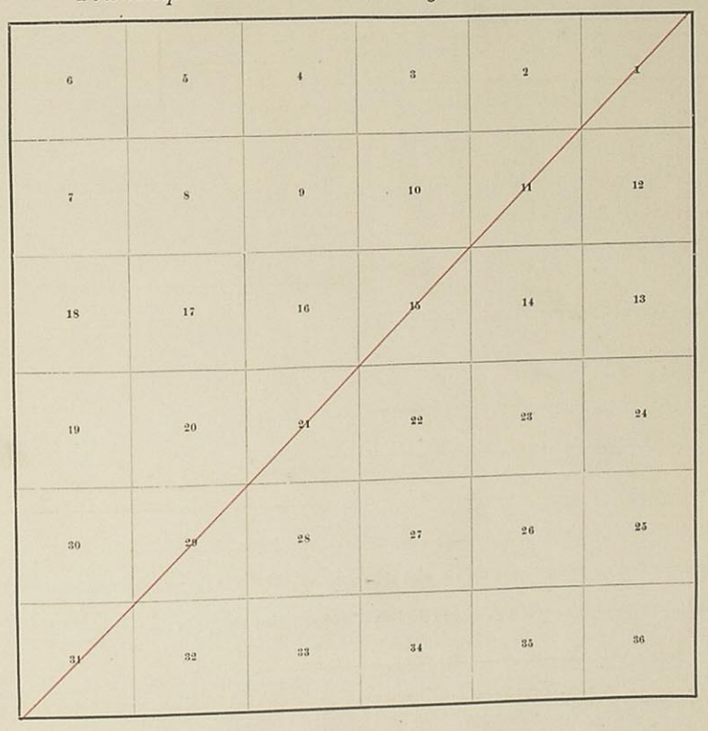
Clifford H. Norton	Chainman.
Herbert J. Paul	Chainman.
Claylon J. Norton	Axman and Moundman
Howard J. Sheppard	Axman and Moundman
William L. Stitt	Flagman.
Lewis M. Williams	Flagman.

INDEX



INDEX DIAGRAM.

Township ....., *Range* .....



Meanders Page .....

Note by Surveyor General:

The original preliminary affidavits of assistants of which the following are copies are filed with the notes of the second guide meridian west through townships 35 north between ranges 16 and 17 west of the sixth principal meridian, executed under this same contract, and contained in book lettered "E"

Preliminary Oaths of Assistants.

We, Clifford H. Norton, Herbert J. Paul, Clayton J. Norton and Floran E. Harvey

do solemnly swear that we will well and faithfully execute the duties of chain ~~carriers~~ men; that we will level the chain over even and uneven ground, and plumb the tally-pins either by sticking or dropping the same; that we will report the true distance to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance with instructions given us in the survey of the Second Guide Meridian West through township Thirty five (35) N. between Ranges sixteen (16) and Seventeen (17) West of the 6th P. Meridian, and the lines between Ranges 13 and 14, 14 and 15, 15 and 16, 17 and 18, 18 and 19, and 19 and 20, all through fractional townships 35 N of Rs. 13, 14, 15, 16, 17, 18, 19, and 20 West of the 6th principal meridian in the state of Nebraska.

Clifford H. Norton, Chainman.
Hubert J. Paul, Chainman.
Clayton J. Norton, Chainman. and Moundman
Floran E. Harvey, Chainman

Subscribed and sworn to before me this 29th day of June, 1895.

Davis W. Forbes
Seal Notary Public

my commission expires Dec. 9th 1897.

We, Howard J. Skippard, Lewis M. Williams and William L. Still

do solemnly swear that we will well and truly perform the duties of axemen moundman and flagmen in the establishment of corners and other duties, according to instructions given us, and to the best of our skill and ability, in the survey of the Second Guide Meridian West through township thirty five (35) North, between ranges sixteen (16) and seventeen (17) West of the 6th principal meridian and the lines between ranges 13 and 14, 14 and 15, 15 and 16, 17 and 18, 18 and 19, and 19 and 20 are through fractional Townships 35 N of Rs 13, 14, 15, 16, 17, 18, 19 and 20 west of the 6th principal Meridian in the state of Nebraska

Subscribed and sworn to before me this 29th day of June, 1895.

Clayton J. Norton, Axeman. and Moundman.
Howard J. Skippard, Axeman. and Moundman.
Lewis M. Williams Flagman
William L. Still Flagman

Davis W. Forbes
Seal Notary Public
6-181

my Commission expires Dec. 9, 1897.

West Boundary of T. 35 N R 13 W. 1

Chains Survey commenced June 29th 1895 and executed with a Haller & Brightly transit no 66602 with Solar attachment. The horizontal limb is provided with two double verniers placed opposit to each other reading to 20" of arc and the Latitude and declination arcs to single minutes of arc. This instrument was examined, tested on the true Meridian at Huron S.D. found correct and was approved by the Surveyor General for S.D. June 21st 1895. I examine the adjustments of the transit and find the level and collimation to be correct. then to test the Solar apparatus by comparing its indications resulting from Solar observations made during Am. and P.M. hours with a true Meridian determined by observations on Polaris I proceed as follows.

June 29th 1895 At the cor to Tps 34 and 35 N Rs 13 and 14 W Latitude 42° 57' 37" N Longitude 98° 54' 09" W at 4h 30m P.M. Sut. I set off 42° 57' 37" N on Lat. arc, and 23° 14' N. on decl arc, and determine with the Solar a true Meridian and mark a point thereon on a stone set firmly in the ground on top of a high steep bluff 6.64 chs N of the cor.

June 29th 1895, 12h 52m A.M. by my watch which I compared and set with Solar June 29th 4h 30m P.M., I observe Polaris at eastern elongation, in accordance with the "Manual of Instructions" and mark a point on the line thus determined on a plug driven in the ground on top of the bluff 6.64 chs N of my station June 29 1895

June 30 1895 At 6h 45m A.M. Sut. I lay off the azimuth of Polaris 1° 42' To the west and mark the true Meridian thus determined by cutting a small groove in the stone set June 29th on which the true Meridian falls 0.3 ins E of the mark determined by the solar

At 9h A.M. Sut. I set off 42° 57' 37" N on the Lat arc and 23° 12' N on the decl arc and mark a point on the true Meridian determined with the solar by cutting a small groove in the stone already set 6.64 chs N of my Station. This mark falls 0.35 ins E of the true Meridian established by Polaris observation. The Solar apparatus by P.M. and A.M. observations defines

West Boundary of Tp 35 N R 13 W continued

chains	
	position from true Meridians respectively about 0°-12' W and 0°-14' E of the true Meridian established by Polaris observations. thereon I conclude the adjustments of the instrument are satisfactory. The magnetic bearing of the true Meridian at 7 a.m. is N 12°-15' W the angle thus determined reduced by the tables page 100 gives the mean mag. decl 12°-10' E
	I begin at the cor to Tps 34 and 35 N Rs 13 and 14 W which is a sandstone 4 x 14 x 5 ins above ground firmly set marked and witnessed as described by the Surveyor General. Thence I run
	North bet sec's 31 and 36
.46	Wire fence bears N 38° E and S 38° W
3.90	Ponca Creek 6 ft lower than cor 10 links wide clear running water course S 88° E
4.00	Ascend high steep bluff, 75 ft high inter Mountainous land
6.64	Observation Stone on top of south edge of bluff
7.00	Top of bluff, begin descent of long NE slope of hill
16.20	Ravine course SE, 50 ft deep
34.95	Ravine course SW ascend
40.00	Set a sandstone 15 x 9 x 8, 10 ins in the ground for 1/4 sec cor marked 1/4 on W face: dig pits 18 x 18 x 12 ins N and S of stone 3 ft dist: and raise a mound of earth 3½ ft base 1½ ft high west of corner
45.00	Top of hill, thence over gently rolling ground
59.00	Road bears NW and SE
80.00	Set a sandstone 17 x 10 x 5 ins 12 ins. in the ground for cor of sec's 25, 30, 31 and 36 marked 13 W on E side, 14 W on W side and 1 notch on S and 5 notches on N edges: dig pits 18 x 18 x 12 ins. in each sec, 5½ ft dist. and raise a mound of earth 4 ft base 2 ft high W of cor
	Land 3.50 chs rolling and broken by deep ravines, Soil 3rd rate N 30 chs gently rolling, Soil 2nd rate
	There is some brush willow, box elder, plum and small cottonwood and elm trees along Ponca Creek
	Mountainous land 41.70 chs

West Boundary of T 35 N R 13 W continued

chains	
	North bet sec's 25 and 30
	Descend over Mountainous land
4.85	Ravine course E ascend
7.00	Top of ridge, descend
11.35	Ravine course E
16.03	Ravine course N.E.
19.70	Ravine course S.E.
26.10	Ravine course SE, head of same about 60 links W of line
26.50	Land broken, Mountainous and enter smooth gently rolling prairie
40.00	Set a sandstone 16 x 10 x 5 ins 10 ins. in the ground for 1/4 sec cor marked 1/4 on W face: dig pits 18 x 18 x 12 ins N and S of stone 3 ft dist. and raise a mound of earth 3½ ft base 1½ ft high W of cor
43.00	Head of drain descends SE
80.00	Set a sandstone 15 x 10 x 6 ins 10 ins in the ground for cor of sec's 19, 24, 25 and 30 marked 13 W on E face, 14 W on W face, with 2 notches on S and 4 notches on N edges: dig pits 18 x 18 x 12 ins in each sec 5½ ft dist: and raise a mound of earth 4 ft base 2 ft high W of cor
	Land rolling S 26.50 chs broken balance table land
	Soil clay 2nd and 3rd rate
	No timber
	Mountainous Land, South 26.50 chs
	North bet sec's 19 and 24
	Over gently rolling table land
1.40	Road bears NW and SE
40.00	Set a sandstone 19 x 10 x 3 ins - 12 ins in the ground for 1/4 sec cor marked 1/4 on W face: dig pits 18 x 18 x 12 ins N and S of stone 3 ft dist. and raise a mound of earth 3½ ft base 1½ ft high W of cor.
46.30	Road bears NE and SW
58.55	Intersect the North Boundary of Nebraska 6.13 chs East of the 38 mile stone which is a quarter stone 3½ ft x 10 x 10 ins above ground marked S.□. on N, N on S and 38 M on W faces
	Set a sandstone 18 x 12 x 8 ins 12 ins in the ground for closing cor of Tp 35 N Rs 13 and 14 W marked

C.C. 35 N and 3 grooves on S face.
13 W and 6 grooves on E ~~edge~~ face.
14 W and 6 grooves on W ~~edge~~ face;
dig pits 30 x 24 x 12 ins. crosswise on each line
E and W 4 ft and S of stone 8 ft dist. and
raise a mound of earth 5 ft base 2½ ft
high S of corner.

Land gently rolling
Soil clay good 2nd rate
No timber

June 30th 1895

Boundaries of Tp 35 N. R 13. W.
Latitudes Departures and closing errors

Lines Designated	True Bearing	Dist	Latitudes N	Latitudes S	Departures E	Departures W
S bdy T 35 N R 13 W	N 89°-57' W	479.98	.42			479.98
W bdy T 35 N R 13 W	North	218.55	218.55			
N bdy T 35 N R 13 W	East	480.40			480.40	
E bdy T 35 N R 13 W	South	218.95		218.95		
Convergency					.30	
	Totals		218.97	218.95	480.70	479.98
			218.95		479.98	
	Error in Lat		.02	Error in Dept	.72	

General Description
This township is rolling, broken, and
mountainous in the southern part and
rolling table land in the northern part
The soil is clay. Ponca Creek runs through
the south west corner.
No timber worthy of notice
There are a number of settlers in the
township living in sod houses

Robert Harvey
U.S. Dept Surveyor

Alfred W Gunnar
acting as Surveyor
U S Deputy Surveyor
and acting in capacity of Topographer

Statement.

To satisfy myself as to the length
of the S Bdy of this Tp 35 N R 13 W
I carefully remeasure the S Bdy
of sec's 36, 35, 34, 33, 32 and 31 and
obtain the following remeasurements
to wit:

S Bdy of sec 36	80.18 chs
S Bdy of sec 35	80.08 chs
S Bdy of sec 34	80.26 chs
S Bdy of sec 33	80.14 chs
S Bdy of sec 32	80.22 chs
S Bdy of sec 31	79.10 chs
Total	479.98 chs

As the true measurement of
S Bdy of said Tp, This I placed
in the table of Lat. Dep. and
closing errors of this Tp. on
page 4.

Robert Harvey
U.S. Deputy Surveyor

West Boundary of T35 N R14 W 6

Chains Survey commenced July 10th 1895

I begin at the cor to Tps 34 and 35 N Rs. 14 and 15 W which is a sandstone 10 x 15 x 5 ins above ground firmly set marked and witnessed as described by the Surveyor General Latitude 42°-54'-37" N Longitude 99° 1'-14" W

At this corner at 4h 30m P.M. Cent. I set off 42°-57'-37" N. on the Latitude arc and 22°-12'-30" N. on the dec'l arc and determine a true Meridian with the Solar and marked the point thereof on a stone set firmly in the ground 5.00 chs N of the corner

July 11th 1895 at 12h 08m am. Cent. by my watch which I compared with the solar yesterday afternoon. I observe Polaris at eastern elongation in accordance with Manual of instructions and mark a point on line thus determined on a plug driven in ground 5.00 chs N of my stone

At 5h 30m am. Cent. I lay off the azimuth 1° 42.7 to the west and mark the true Meridian thus determined by cutting a small groove in the stone set July 10th on which the True Meridian falls 0.1 ins east of mark determined by the solar

At 6h am. Cent. I set off 42°-54'-37" N on the Lat arc and 22° 09' 30" N on dec'l arc and determine a true Meridian with the solar and mark a point on the stone already set 0.25 ins east of the true Meridian established by the Polaris observation.

The Solar approaches by P.M. and Am. observations define positions for True Meridians respectively about 0'-5" W and 0'-13" E of the True Meridian established by Polaris observations: I therefore conclude the adjustment of the instruments satisfactory.

The Magnetic bearing of the True Meridian at 6h am. is N 12°-17' W: The angle thus determined reduced by the table page 100. gives the mean dec'l 12°-13' E

From the above described cor to Tps 34 and 35 Rs 14 & 15 W I run North between Secs 31 and 36 over undulating prairie

7 West Boundary of T 35 N R 14 W continued

chains	
12.25	E.A. Bennetts sod house bears W 2.50 chs dist.
24.65	Begin descent
32.40	Ravine course E 50 ft deep
33.50	Ravine course SE 50 ft deep ascend
33.65	Road bears NE. and SW
40.00	Set a sandstone 14 x 14 x 4 ins 9 ins in the ground for 1/4 sec cor marked 1/4 on W face: dig pits 18 x 18 x 12 ins N and S of stone 3 ft dist: and raise a mound of earth 3 1/2 ft base 1 1/2 ft high W of cor.
46.50	N.E. cor wirefence bears W 45 links dist
49.00	Top of hill
52.00	Begin descent
59.68	SE cor of wirefence bears W 84 links dist.
75.80	wirefence bears N 3° E and S 3° W
77.00	Henry Grüber sod house bears E 1.80 chs dist
79.75	N. line wirefence bears E & W. 27 links W. of NE line cor
80.00	Set a sandstone 18 x 8 x 4 ins 12 ins in the ground for cor of secs 25, 30, 31 and 36 marked 14 W on E 15 W on W with 1 notch on S. and 5 notches on N edges: dig pits 18 x 18 x 12 ins, in each sec 5 1/2 ft dist: and raise a mound of earth 4 ft base 2 ft high W of corner.

Land rolling and broken on S. 50 chs.
North 30 chs rolling
Soil clay 2nd and 3rd rate
No timber

North between secs 25 and 30
over rolling ground

3.50	Enter plowed field bears N 3° E and S 3° W
21.35	Leave same field bears N 3° W and S 3° E
29.00	Claus Vogts sod house bears W about 6 chs
34.80	Ravine course NE – ascend
40.00	Set a sandstone 21 x 13 x 3 ins 15 ins in the ground for 1/4 sec cor marked 1/4 on W face: dig pits 18 x 18 x 12 ins N and S. of stone 3 ft dist: and raise a mound of earth 3 1/2 ft base 1 1/2 ft high W of corner

West Boundary of T 35 N R. 14 W continued 8

chains	
44.85	Ravine course SE
60.25	SE cor wire fence bears 44 links W
60.80	north edge of smooth land begin rapid descent of gravelly bluff bears E & W bluff 100 ft high
70.20	Foot of bluff and enter Ponca cr Valley bs E & W
78.60	sod school house bears E 117 links dist.
79.85	Road bears E & W
80.00	Set a sandstone 21 x 16 x 3 ins 15 ins in the ground for cor of secs 19, 24, 25 and 30 marked 14 W on E 15 W on W faces. 2 notches on S and 4 notches on N edges: dig pits 18 x 18 x 12 ins in each sec 5 1/2 ft dist and raise a mound of earth 4 ft base 2 ft high W of cor

Jas Taylors house bears 379° 15' W from this cor.
Land rolling broken and level
Soil clay and gravelly 2nd & 3rd rate
No timber

North bet secs 19 & 24
over gently descending valley

.71	wirefence bears E and W
13.50	Ponca creek 25 links wide course E
14.62	Wire fence bears E and W
16.15	Enter plowed field bears E and W
25.00	Leave same, bears E & W leave Valley and enter mountainous Bluffs
25.25	Road bears E and W
27.90	Top of gravelly ridge bears NW and SE – descend
28.00	Chas Townsends sod house bears W about 10 chs
39.50	Ravine course SE ascend.
40.00	Set a sand stone 21 x 12 x 3 ins 15 ins in the ground for 1/4 sec cor marked 1/4 on W face: dig pits 18 x 18 x 12 ins N and S of stone 3 ft dist: and raise a mound of earth 3 1/2 ft base 1 1/2 ft high W of cor
43.90	Top of gravelly ridge E and W
53.65	Wirefence N 5° W. S 5° E
54.50	Ravine course SE
58.12	NE cor wirefence bears W 9 links dist.
58.21	Intersect North Boundary of Nebraska 6.83 chs east of the 32 mile stone which is a quartzite 3 1/2 ft by 10 x 10 ins above ground marked SD on N

9 West Boundary of T 35 N R 14 W continued

N on South and 32 M on W face
Set sandstone 22 x 9 x 5 ins. 15 ins in the ground for closing cor of Tps 35 N. R 14 and 15 W.
Marked C.C. 35 N. and 3 grooves on South face
14 W and 6 grooves on the East face
15 W and 6 grooves on the West face: dig pits 30 x 24 x 12 ins crosswise on each line E and W 4 ft and S of stone 8 ft dist. and raise a mound of earth 5 ft base 2½ ft high S of cor
Land South 25 chs valley Soil clay and sand 2nd rate balance broken Soil gravelly & clay 3rd rate
There is plum, willow, ash and box elder brush and small elm trees along the creek with some Cottonwoods trees. Mountainous land 33.21 chs.

July 11th 1895. 8h 30m

Boundaries of T. 35 N. R. 14 W.

Lines designated	True bearing	Dist	Latitudes N	Latitudes S	Departures E	Departures W
S bdy T 35 N R 14 W	West	479.17				479.17
W bdy T 35 N R 14 W	North		218.21			
N bdy T 35 N R 14 W	East				479.30	
E bdy T 35 N R 14 W	South			218.55		
convergency					.30	
	Totals		218.21	218.55	479.60	479.17
				218.21	479.17	
	Error in Lat.			.34		
	Error in Dep.				.43	

General Description

This Township is in general rough and mountainous in the southern part. The northern part is smoother. Pauca Creek runs through the Township.
It has a narrow valley about one half mile wide. The bluffs along the creek are generly high and quite steep. The creek is very tortuous. There is considerable brush such as plum, willow, box elder, ash and elm, with some Oak. There are few large trees
A number of families have settled in the Tp.

Robert D. Harvey U.S. Deputy Surveyor
Alfred W. Sumner acting as surveyor U.S. Deputy Surveyor
and acting in capacity of Topographer

10 West Boundary of T 35 N R 14 W continued

Statement

To satisfy myself as to the length of the S Bdy of Tp 35 N R 14 W. On the 9th day of July 1895, I set my instrument over the cross cut on the top of the stone at the cor of Tps. 34 and 35 N. R's 13 and 14 W and turned an angle of 90° from the true meridian, to the west, and run west on a tangent line and measured carefully the S Bdy of Tp 35 N R. 14 W and obtained the following measurements to wit:

S Bdy sec 36	80.06 chs	
S Bdy sec 35	79.98 chs	
S Bdy sec 34	80.06 chs	
S Bdy sec 33	80.19 chs	
S Bdy sec 32	80.12 chs	
S Bdy sec 31	78.76 chs	
Total	479.17 chs	

to the SW cor of said Tp 35 N R 14 W and the tangent line falls S of said cor 13.5 ft. The measurement thus obtained I place in the column of W Dep's in the table of Latitudes Departures and closing errors ~~on page~~ instead of 478.65 chs which is the length of said Bdy line according to original notes. The alinements of said Bdy is good and the offsets from the tangent are regular and the course practically agree with that stated by the Surveyor General

Robert Harvey
U.S. Deputy Surveyor

West Boundary of T. 35 N. R. 15 W. 11

Survey commenced July 15. 1895 at the Cor to Tps 34 and 35 N. Rs. 15 and 16 W. Latitude 42° 57' 37.7" N. Longitude 99° 8' 19" W.

At 8h 30m A.M. l.mt. I set off 42° 57' 37" N on Lat arc and 21° 32' N on decl. arc. determine a true meridian with the Solar; and mark a point thereof on a stone set firmly in the ground 8.00 chs S. of the Cor. (There is a low hill N. of the Cor. which obstructs the line of sight to the north)

At 5h P.M. l.mt. I set off 42° 57' 37.7" N. on Lat arc and 21° 29' N on decl arc. determine with the Solar a true meridian. by cutting a small groove on the stone already set 8.00 chs S. of my station.

At 11h 49m P.M. l.m.t. by my watch which I compared with the Solar this afternoon. I observe Polaris at Eastern elongation. in accordance with Manual of Instructions and mark a point on the line thus determined on a plug driven in the ground 8.00 chs S of my station. July 15 1895

July 16: At 6h A.M. l.mt. I lay off the azimuth of Polaris 1° 42'. 7 to the West. and mark the true meridian thus determined by cutting a small groove in the stone set July 15 on which the true meridian falls 0.5 lns East of the true meridian determined by the Solar at 8h 30m A.M. and 0.4 lns West of the true meridian determined by the Solar at 5h P.M. July 15.

The Solar apparatus by A.M. and P.M. observations defines positions for true meridians respectively about 0' 15" East and 0' 12" West of the True Meridian Established by Polaris observations; Therefore I conclude the adjustments of the instrument are satisfactory.

The Magnetic bearing of the True meridian at 6h A.M. is N 12°. 12' W. the angle thus determined reduced by table page 100 gives the mean Mag decl. 12° 08' E.

I begin at the above described Corner to Tps 34 and 35 N. Rs 15 and 16 W. which is a sand stone 10xxxxins above ground, firmly set, marked and witnessed as described by the Surveyor General. Thence from

Chains	
	North bet. secs. 31 and 36.
	Ascend gentle slope
3.25	Top of low west ridge or slope of bluff
	thence over rolling west slope
13.80	Ravine course W.
22.00	enter rolling prairie tableland bears NW and SE
27.97	Road bears N 63° W and S. 63° E.
36.23	Enter grainfield. bears E and W.
40.00	Set a sand stone 14×13×5 ins. 10 ins in the ground for 1/4 sec. cor. marked 1/4 on W. face dig pitts 18×18×12 ins N and S of stone 3 feet dist; and raise a mound of earth 3½ ft base 1½ ft high W of Cor.
40.75	Road bears E and W.
62.95	Drain Course E.
80.00	Set a sandstone 20×17×10 ins. 15 ins in the ground for Cor. of Secs 25-30-31 and 36. marked 15 W. on E. 16 W on W. faces. 1 notch on S and 5 notches on N edges. dig pits 18×18×12 ins in each sec. 5½ ft dist. and raise a mound of earth 4 ft base 2 ft high W of corner.

Land rolling
Soil gravelly 3rd rate
No timber

North bet. secs. 25 and 30
Over rolling ground
Descend

0.35	Leave plowed field - E & W.
6.80	Ravine course E
15.85	Road bears S 61° E and N 61° W.
32.04	Road bears N 78° E and S 78° W
40.00	Set a sandstone 17×16×3 ins. 11 ins in the ground for 1/4 sec. Cor. marked 1/4 on W face; dig pits 18×18×12 ins N and S of stone 3 ft dist and raise a mound of earth 3½ ft base 1½ ft high W of Cor.

From this corner Chris. Fishers adobe house bears N. 62° E about 5.00 chs dist. and Jacob Pearmans adobe house bears N 38° W about 10 chs distant

Chains	
	over descending ground
51.95	Ravine course S. 28° E
	ascend
71.85	Road bears NW and S.E.
72.78	Road bears E and W.
80.00	Set a sandstone 20×13×4 ins.-15 ins in the ground for cor. of secs. 19. 24 25 and 30. marked 15 W. on E. 16 W on W faces 2 notches on S. and 4 notches on N edges. dig pits 18×18×12 ins in each sec 5½ ft dist; and raise a mound of earth 4 ft base 2 ft high W of Cor.

Land rolling
Soil clay and gravel, 2nd and 3rd rate
No timber

North between secs. 19 and 24
over rolling prairie

19.10	Enter plowed field bears E and W.
27.10	Leave same bears. N 3° E and S 3° W.
40.00	Set a sandstone 16×13×3 ins-10 ins. in the ground for 1/4 sec. Cor. marked 1/4 on W face. dig pits 18×18×12 ins N and S of stone 3 ft dist; and raise a mound of earth 3½ ft base 1½ ft high W of Cor.
58.02	Intersect the North Boundary of Nebraska 6.89 chs east of the 26 mile stone. which is a quartzite 3½ ft × 10×10 ins. above ground marked S.D. on N.N on S and 26 M on W faces

Set a sandstone 22×14×5 ins. 16 ins in the ground for closing Cor. of Tp. 35 N. Rs 15 and 16 W. marked C.C 35 N and 3 grooves on S face
R 15 W and 6 grooves on E and
R 16 W and 6 grooves on W. faces; dig pits 30×24×12 ins crosswise on each line E and W 4 ft and S of stone 8 ft dist. and raise a mound of earth 5 ft base 2½ ft high S of corner

Land rolling
Soil Clay and gravel 2nd and 3rd rate
No timber

July 16th 1895

Boundaries of T. 35 N. R 15 W.
Latitudes, Departures and Closing Errors.

Lines Designated	True Bearing	Dist.	Latitude N	Latitude S	Departure E	Departure W
S Bdry T 35 N R 15 W	West	479.22				479.22
W " " " " " "	North	218.02	218.02			
N " " " " " "	East	479.94			479.94	
E " " " " " "	South	218.21		218.21		
Convergency					.30	
			218.02	218.21	480.24	479.22
				218.02		
	Error in Lat.			.19	479.22	
	Error in dep.				1.02	

General Description

This township is rolling prairie in the South and West portions. In the North eastern it is rough and mountanious. Ponca Creek runs through the N E part, along which is found considerable brush - such as plum, buffalo-berry, Willow - boxelder - ash and Oak - also larger timber, Cottonwood - boxelder ash Elm and Oak
There is considerable sandstone on the hill-tops and sides in the East part
The Village of Naper is situated in Secs 32 and 33, and contains about 30 buildings
Quite a number of farmers have settled in the farming portions of the Township

Robert Hanry U.S. Deputy Surveyor
Alfred W Tumair Actg as Surveyor U.S. Dep. Surveyor
And Acting in Capacity of Topographer

Statement

To satisfy myself as to the length of the S. Bdy of T. 35 N R 15 W. on the morning of July 15 1895 I set my instrument over a point 3.1 ft South of the corner of Tps 34 and 35 N Rs 14 and 15 W. and from the true meridian turn an angle of 89° 57' - 20" to the West and run W. on a secant line to a point 2.9 ft S of the Cor of Tps 34 and 35 N Rs 15 and 16 W. and measured carefully the S Bdy of said Tp and obtained

the following distances to wit:

S. Bdy Sec. 36	80.14 Chains
S Bdy Sec. 35	80.08 chains
S Bdy Sec. 34	80.08 chains
S Bdy Sec. 33	80.12 chains
S Bdy Sec 32	80.11 chains
S Bdy Sec 31	78.69 Chains
Total	479.22 chains

The measurements thus obtained I place in the column of West Departures in table of Latitude Departures and closing Errors on page 5 instead of 478.65 chs which is the length of said bdy line according to original notes.
The offsets are quite regular but in excess of the tabular offsets thus causing an excess of curvature of said bdy line
The S.E. and S W corners of the Tp are however in the same Latitude and for the purposes of the Table the course of the South Bdy is West

Robert Hanry
U.S. Deputy Surveyor

West Boundary of T. 35 N. R. 17 W. 16

Survey commenced July 23rd 1895. and executed with a Heller & Brightly Transit No. 6602. The horizontal limb being provided with two opposite verniers reading to 20" of arc. and the latitude and declination arcs reading to single minutes of arc.

I examine the adjustments of the transit and find the levels and collimation to be correct; then to test the Solar apparatus by comparing its indications resulting from Solar observations made during A.M. and P.M. hours with a true meridian determined by observations on Polaris I proceed as follows

At the corner to Tps 34 and 35 N. Rs 17 and 18 W. Latitude 42° 57' 37" N. Longitude 99° 22' 27" W at 6h P.M. l.m.t. I set off 42° 57' 37" N. on the Lat. arc; and 20° 1' 30" N on decl. arc; determine with the Solar a true meridian; and mark a point thereof on a stone set firmly on top of a ridge 6.50 chs North of the Cor.

At 11h 17m 7s P.M. l.m.t. by my watch which I compared with the Solar at 6h P.M. I observe Polaris at eastern elongation in accordance with the Manual of Instructions, and mark a point on the line thus determined on a plug driven in the ground 6.50 chs N of my station

July 23rd 1895

July 24 1895 at 5h 45m A.M. l.m.t. I lay off the azimuth of Polaris 1° 42' 7" to the West and mark the True meridian thus determined by cutting a small groove in the stone set July 23rd on which the True Meridian falls 0.5 ins East of mark determined by the Solar

At 6h A.M. l.m.t. I set off 42° 57' 37" N. on Lat. arc. 19° 55' 30" N on decl. arc. and mark a point in the true meridian thus determined with the Solar, by a groove cut in the stone already set 6.50 chs N. of my station This mark falls 0.55 ins East of the True meridian established by Polaris observation.

The Solar apparatus by P.M. and A.M. observations defines positions for true meridians, respectively about 0' 26" West and 0' 22" East of the True meridian established by Polaris observation. Therefore I conclude ~~I conclude~~ the adjustments of the instrument are satisfactory

The magnetic bearing of the True Meridian at 7h a.m. is N 12° 22' W the angle thus determined reduced by the

table page 100 gives the mean Magnetic decl 12° 18 E.
I compare my measuring chain with the Standard chain and find it correct.

I begin at the Cor. to Tps 34 and 35 N. Rs 17 and 18 W. which is a sandstone 12×16×4 ins above ground, firmly set, marked and witnessed as described by the Surveyor General.
Thence I run.

	North brk. Secs. 31 and 36
	Over rough mountainous land
	Descend steep hill
0.70	Short gulch bears N 45° W 10 ft lower than Cor.
1.00	Low ridge or N.W. spur brk. gulch and ravine
1.50	Ravine course N. 25 ft. lower than Corner
	Ascend
6.50	Observation stone on top of ridge - ridge bears E and W. 20 ft higher than corner
12.00	Top of sharp gravelly ridge. bears N.W. and S.E.
	Descend steep bluff
19.50	Foot of bluff and enter Wolf Creek Valley, bears E and W.
20.04	Wolf Creek - water in holes, dry on line - course N.
30.00	Leave Valley and ascend long smooth slope bears N. and S.W.
40.00	Set a sandstone 18×14×3 ins - 12 ins. in the ground for 1/4 Sec Cor. marked 1/4 on W face - dig pits 18×18×12 ins. N and S of stone 3 ft dist and raise a mound of earth 3½ ft base 1½ ft high W. of Cor.
45.00	Top of bluff 75 ft higher than Valley
	Thence over undulating table land
61.75	Wire fence bears E and W.
69.75	Ravine course S 45° E. head is about 1.00 ch N.W.
77.50	Begin descent of N.E. slope
80.00	On East slope of hill set a sandstone 18×13×4 ins, 10 ins in the ground for Cor. of Secs. 25, 30, 31 and 36 marked R17 W on E and R. 18 W on W. faces. 1 notch on S and 5 notches on N. edges; dig pits 18×18×12 ins in each Sec. 5½ ft dist. and raise a mound of earth 4 ft base 2 ft high W. of Cor. At this Cor. Joseph Payne's log house bears N 70° E about 15 chs dist.

Land rolling - S 45 chs broken and mountainous 3rd rate
N. 35 chs smooth table land. Clay soil 2nd rate
No timber - mountainous land 45.00 chs

	North brk. Secs. 25 and 30.
	Over broken mountainous surface
	Descend slope
1.40	10 ft. lower than corner - ascend
5.00	Top of hill
18.95	Road bears S 72° E and N 72° W.
22.25	Wire fence, bears E and W.
29.65	Ravine 30 ft deep, Course S. 72° E.
40.00	Set sandstone 20×12×3 ins - 15 ins in the ground for 1/4 Sec. Cor. marked 1/4 on W face. dig pits 15×15×12 ins N and S. of stone 3 ft dist and raise a mound of earth 3½ ft base 1½ ft high W of Cor.
44.00	Ravine 50 ft deep - Course S 65° E.
52.85	Ravine 25 ft deep course E.
59.40	Ravine 40 ft deep course S 50° E
70.50	Top of gravelly ridge - bears N W and S.E.
	Descend steep bluff
71.80	Foot of bluff and enter Valley of Wolf Creek N W and S E
72.00	West branch of Wolf Creek - water in holes dry on line - Course S 60 E
77.60	Same dry creek, course S 12° W
79.40	Same dry creek course S 67° E
79.90	Leave Valley and ascend hill bears N W and S.E.
80.00	3 ft higher than Valley, set a sand stone 18×14×3 ins. - 12 ins. in the ground for cor. of Secs. 19, 24, 25 and 30 marked R 17 W. on E. R 18 W. on W. faces 2 notches on S and 4 notches on N edges, dig pits 18×18×12 ins. in each Sec. 5½ ft dist. and raise a mound of earth 4 ft base 2 ft high W of Cor.

Land rough and mountainous
Soil gravelly 2nd rate
No timber
Mountainous land 71.80 chs.

North brk. Secs. 19 and 24
ascend along N slope of hill

10.00	South edge of smooth ground - bears N W and S E
	Thence over smooth rolling prairie
16.50	Top of round Knoll - descend

19 West Boundary of T 35 N R 17 W continued

18.85	Enter cornfield near S.E. corner - bears E and W.
19.55	Leave same - bears N.W. and S.E.
40.00	Set a sandstone 20×15×4 ins - 15 ins in the ground for 1/4 Sec. Cor. marked 1/4 on W face: dig pits 18×18×12 ins. N and S. of stone 3 ft dist: and raise a mound of earth 3½ ft base 1½ ft high W of Cor.
42.70	S E corner William Petersens sod house bears West 10 links dist:
44.15	Leave smoothe prairie and descend into Wolf Creek valley - bears N W and S.E.
48.90	Branch Wolf Creek 2 links wide 1 inch deep clear running water course E.
50.70	Wire fence bears N W and S E
51.72	Branch of Wolf Creek 1 lk wide 1 inch deep clear cold running spring water course S 23° E.
53.50	Leave valley and ascend hill bears N W and S.E.
58.60	Intersect the North Boundary of Nebraska 7.62 chs East of the 14 mile stone - which is a quartzite 3½ ft × 10 × 10 inches above ground - marked S.D. on N. - N on S and 14 M on W faces

Set a sandstone 14×11×7 ins - 9 ins in the ground for closing cor of Tp 35 N Rs 17 and 18 W. marked C.C.T. 35 N. and 3 grooves on S face
R 17 W and 6 grooves on E and
R 18 W and 6 grooves on W faces and a cross (+) cut on top of stone, dig pits 30×24×12 ins crosswise on each line E and W 4 ft and S of stone 8 ft dist: and raise a mound of Earth 5 ft base 2½ ft high S of Cor

Land rolling
Clay soil 2nd rate The creek valley is narrow has black clay soil producing tall hay 1st rate
The creek is fed by springs of clear cold water.
No timber

July 24 1895

West Boundary of T. 35 N R 17 W. continued 20

Boundaries of T. 35 N. R 17 W.

Latitudes Departures and closing Errors

Lines designated	True bearing	Dist.	Latitudes N	Latitudes S	Departures E	Departures W
S Bdy T 35 N R 17 W	S. 89° 53' W	479.36		.96		479.36
W Bdy T. 35 N. R 17 W.	North	218.60	218.60			
N. Bdy T 35 N R 17 W.	East	479.25			479.25	
E. Bdy T 35 N R 17 W	South	218.02		218.02		
Convergency		Totals	218.60	218.98	479.05	479.36
		Error in Lat.		218.60 / .38	479.36	
		Error in Dep			.19	

General Description

This Township is rough broken and mountainous in the southern and western portion
Generally smooth in the N.E. part
It is well watered by numerous small spring brooks of clear, cold water. Along the narrow valleys of these brooks is found tall grass making excellent hay
The soil of the table land is a clay and gravelly which produces fair crops of small grain, all crops of grain in the valleys and on table land are behind in amount of yield per acre owing I think to the dry weather.
Nearly all the good land is occupied by settlers, living in sod adobe and log houses.
William Petersen has built a dam across the Creek W. of the line and irrigates a small garden and truck patch, in Sec 24.

July 24th 1895.

Robert Harvey
U.S. Deputy Surveyor
and Acting as Surveyor

Alfred W. Tinnacre
U.S. Deputy Surveyor and
Acting in capacity of topographer

Statement

To satisfy myself as to the course and length of the S. B'dy of Tp 35 N R 17 W. On July 23 1895 I set my instrument over

the cross (+) cut on top of the stone at the cor. of Tps 34 and 35N Rs 16 and 17W. and from the true meridian turn an angle of 90° to the W. and run W. on a tangent line and fall N of the cor. of Tps 34 and 35N Rs 17 and 18W. 62 links. The measurements thus obtained are as follows

S Bdy Sec. 36	80.10 chs
S Bdy Sec. 35	80.16 chs
S Bdy Sec. 34	8012 chs
S Bdy Sec 33	80.08 chs
S Bdy Sec 32	80 04 chs
S Bdy Sec. 31	78.86 chs
Total	479.36 chs

as the true length of said S Bdy. which distance I place in the column of W. Dep in the table of Latitudes Departures and Closing errors ~~on sheet 5~~ and the course is S 89°53' W.

Robert Harvey
U.S. Deputy Surveyor

West Boundary of T. 35 N. R. 18 W.

Chains

Survey commenced July 30 1895 and executed with a Heller & Brightly transit No 6602 with Solar attachment. The horizontal limb is provided with two opposit Verniers reading to 20" of Arc: and the latitude and declination arcs reading to single minutes.

I examine the adjustments of the instrument and find the levels and collimation correct.

Knowing that the Solar apparatus of my instrument is in good adjustment I proceed to establish the west boundry of Tp. 35 N. R. 18 W.

The cor to sec's 25, 30, 31 and 36 T 35 N Rs 18 and 19 W was established by me on July 30 1895, as stated in my notes of the Subdivisions of T 35 N R 18 W according to the special instructions under my said joint contract, I project the line between said Ranges 18 and 19 due south to the Kega Paha river and due north to the North Boundry of the State in the manner following:

July 30 1895 9h 30m a.m. lmt. I set off 42°-58'-29" N on the Lat arc and 18° 30' N. on the decl arc: and determine a true meridian with the solar at the cor above stated

Thence I run

South bet sec's 31 and 36

Over descending ground

25.00 Foot of S.W. spur of bluffs and enter valley M.S.S.E.

31.45 Enter Jack Donaldsons plowed field bears E and W.

39.23 Leave same bears E. and W.

40.00 Set a sandstone 19 x 11 x 3½ ins, 12 ins in the ground for ¼ sec cor marked ¼ on W. face: dig pits 18 x 18 x 12 ins N and S of stone 3 ft dist and raise a mound of earth 3½ ft base 1½ ft high W of cor.

41.58 Road bears S. 85° E. and N 85° W.

41.80 Jack Donaldsons frame house bears E. 3.00 chs dist.

42.20 Wire fence bears E. and W.

49.50 Intersect the left bank of Kega Paha river bank sandy 4 ft high

Set a sand stone 15 x 10 x 5 ins - 10 ins in the ground for Meander cor of fractional sec's 31 and 36. Marked M.C. on S. face: dig a pit 36 x 36 x 12 ins 8 ft N of stone: and raise a mound of earth 4 ft base. 2 ft high N of cor

From which an Ash tree 3 ins in diameter bears N 19°32' E 105 lnks dist. Marked T 35 N, R. 18 W. S. 31. M.C.-B.T.

A Willow tree 7 ins in diameter bears N 41°-26' W 88 lnks dist

23 West Boundary of T 35 N. R 18 W continued

Chains	
	Marked T. 35 N. R 19 W. S 36. M.C.-B.T.
	Land - gentle south slope and level valley
	Soil - of slope 2nd rate - valley 1st rate
	Timber - Willow brush along river bank
	Note. To connect the above cor. with surveys on S bank of Keya Paha river I go to the Cottonwood bearing tree on the Right Bank and run E. 150 lks the distance stated in the Original Notes, and thus determine the point for the Meander Cor. which I do not find, thence N 6.11 chs, thence E. 10.90 chs to the M.C. bet. sec's 31 and 36 on Left bank, just established - I add the following distances on the opposite side of the river
	From Tp cor 34 and 35 N bet Rs 18 and 19 to M.C. on Right bank 42.50 chs
	Distance from M.C. on Right bank North 6.11 chs
	Distance from cor to Secs 25.30.31 and 36 S to M.C. on Left bank 49.50 chs
	Total distance 98.11 chs
	subtract 80.00 chs
	Difference in Lat. is 18.11 chs
	Difference in Dep. is 10.90 chs.
	Therefore, from M.C. on left bank, S. 60° 44' W. 12.50 chs. to M.C. on right bank.
	July 30 1895 at 2h p.m. Lat. I set off 42°-58'-29" N on Lat. arc and 18° 27' N. on dec'l arc and determine a true meridian with the solar at the stated established cor to sec's 25, 30, 31 and 36 T 35 N Rs 18 and 19 W.
	Thence I run
	North bet sec's 25 and 30
	Over Mountainous land - Ascend high steep high hill
3.55	Rocky ledge on W slope of spur
4.45	Short Gulch course S.W.
8.50	Top of S edge of hill or ridge bears E and W.
10.00	Summit of high divide or ridge - descend
15.90	Canyon - 100 ft deep course W. - ascend
21.00	Top of rocky ledge bears W. 50 lks dist.
25.10	Canyon - 100 ft deep bears S.W. - ascend
40.00	Set sand stone 19 x 8 x 4 ins - 14 ins in ground for 1/4 sec cor. Marked 1/4 on W face: dig pits 18 x 18 x 12 ins N and S of stone 3 ft dist: and raise a mound of earth 3½ ft base 1½ ft high W of cor.
43.00	Shallow Drain course S.E. head 1 ch N.W. - ascend
46.00	S base of high flat peak or ridge - ascend rapidly
48.60	Top of S edge of Cap rock of flat top ridge or peak bears E and W.

West Boundary of T 35 N. R 18 W continued 24

Chains	
49.30	N. edge of Cap rock of same bears N.E. and S.W. - descend
60.00	N base of same bears E. and W. Leave Mountainous land
61.60	Ravine course N.E. head 1.00 ch S.W.
80.00	Set sandstone 20 x 10 x 4 ins - 15 ins in the ground for cor to sec's 19, 24, 25 and 30 - marked with 2 notches on S. and 4 on N. edges R 18 W. on E and R 19 W on W. face: dig pits 18 x 18 x 12 ins in each sec 5½ ft dist and raise a mound of earth and stone 4 ft base 2½ ft high W. of cor.
	Note This cor stands on E slope surrounded with hard sandstone. pits difficult to dig.
	Land - rough - broken and Mountainous.
	Soil - gravelly - stoney and Clay 3rd and 4th rate
	Timber - Some Oak bushes in Canyon on S 40 chs
	Mountainous land 60.00 chs.
	North bet sec's 19 and 24
	Over rough stoney ground
2.00	Leave stoney E. slope and descend - Enter Mountainous land
4.00	Johns Creek, now dry, course S 45° E - Ascend
8.35	W. point of rocky ledge
18.00	Top of ridge bears N 67° W and S 67° E.
	The S.E. end of peak bears N 67° W about 2.00 chs dist - Descend
32.00	Foot of slope bears N W and S.E. Leave Mountainous land
32.60	Enter S.W. Snodgrass cornfield bears E and W.
40.00	Set a sand stone 17 x 7 x 5 ins. 14 ins in the ground for 1/4 sec cor. Marked 1/4 on W. face: dig pits 18 x 18 x 12 ins N and S of stone 3 ft dist: and raise a mound of earth 3½ ft base 1½ ft high W of cor.
51.20	S.W. Snodgrass Stone house bears E. 3 chs dist.
55.90	Leave cornfield bears N 20° W and S 20° E.
59.14	Intersect the North Boundry of Nebraska 7.58 chs E. of the 8th mile stone: Which is a quartzite 3½ ft x 10 x 10 ins. above ground: Marked S.D. on N. N on S. and 8 M. on W faces.
	Set a sandstone 19 x 11 x 4 ins - 13 ins in the ground for closing cor of Tp 35 N. Rs 18 and 19 W. marked C.C. 35 N and 3 grooves on S face. 18 W and 6 grooves on E and 19 W and 6 grooves on W faces: dig pits 30 x 24 x 12 ins crosswise on each line E and W. 4 ft and S of stone 8 ft dist and raise a mound of earth 5 ft base 2½ ft high S of cor

25 West Boundary of T 35 N. R 18 W. continued

~~G.W. Snodgrass stone house bears S 18½° E about 10.00 chs distant~~

Land – S 30 chs rough and broken Mountainous
N 29¼ chs smooth N slope and level

Soil – 4th rate in S part – N part good 2nd rate

No Timber

Mountainous land 30 chs July 30 1895

Boundaries of T. 35. N. R. 18 W.
Latitudes Departures and Closing Errors.

	Lines designated	True bearing	Dist's	Latitudes N	Latitudes S	Departures E	Departures W
5 Miles	S. Bdy. T35NR18W	S89°54'W	400.88		.74		400.88
	E. Bdy. Sec 31 T35NR18W	N.0°4'W	80.00	80.00			.09
	N. Bdy. Sec 31	West	78.54				78.54
	W. Bdy T35NR18W	North	139.14	139.14			
	N. Bdy T35NR18W	East	480.04			480.04	
	E. Bdy T35NR18W	South	218.60		218.60		
	Convergency					.27	
		Totals		219.14	219.34	480.31	479.51
		Error in Lat.			219.14 / .20	479.51	
		Error in Dep.				0.80	

General Description

The land in this township varies from creek and river bottom to table land and high elevated peaks and ridges Mountainous – The creeks this year are mostly dry but have water standing in holes – they have their source mostly in spring and bogfats in So Dakota and when they cross the state line have usually narrow defined valleys of good clay land producing good hay and when cultivated good crops of small grain The valleys along the Keya Paha river will average about a quarter of a mile wide – The tableland forms about one half of the surface and is clay and sandy land and this season it is very dry and hard – There are many ridges and peaks throughout the Tp having a cap rock of soft white stone of poor quality – hard sandstone is found on several of these ridges and along the banks of the ravines – There are a few settlers along the dry creeks and on the best of the bench lands – Some brush and a few trees are found along the creeks and bank of the Keya Paha river.

West Boundary of T 35 N. R. 18 W 26

Statement.

To satisfy myself as to the course and length of the S. boundary of T 35 N R 18 W. on July 27 1895 I set my instrument over the cross (+) cut on top of the stone at the cor. of Tps. 34 and 35 N. Rs 17 and 18 W. and from the true meridian turn off an angle of 90° to the West, and run West on a tangent line and fall North of the cor. of Secs 5.6.31 and 32, 50 chs.

I carefully remeasure the S. bdy of the Tp. and obtain the following distances: to wit

S. bdy. sec. 36 . . . 80.06 chs.
S. bdy. sec. 35 . . . 80.12 chs.
S. bdy sec. 34 . . . 80.20 chs.
S. bdy. sec. 33 . . . 80.26 chs.
S. bdy sec 32 . . . 80.24 chs.
Total . . 400.88 chs. as the true length of said S. bdy of T. 35 N. and the course is S89°54'W.

This correction for latitude and departure I place in the columns of S. latitude and W. departure in the table of Latitudes, departures and Closing errors.

Robert Harvey
U. S. Deputy Surveyor
acting as surveyor
Alfred W. Tunnaer
U. S. Deputy Surveyor
and acting in capacity of Topographer

Survey commenced August 9 1895 and executed with a Heller & Brightly transit No 66602 with Solar attachment. The horizontal limb is provided with two opposite verniers reading to 20" of arc; and the latitude and declination arcs reading to single minutes.

I examine the adjustments of the instrument and find the levels and collimation correct.

I establish the West boundary of T 35 N R. 19 W. in accordance with the special instructions under my joint contract.

Preliminary to making said survey I go to the 3rd Mile Stone on the North Boundary of Nebraska and measure West along said line as follows:

At 39.91 chs the 2½ Mile Stone and at 79.99 chs the 2nd mile Stone on said boundary line.

Under said special instructions I am to establish the closing Cor. of the West boundary of R 19 at 6.54 chs (the distance of the closing Cor of sec 19 and 20 of Tp 35 N. R 19 W.) plus 1.96 chs which makes 8.50 chs. By proportional measurement I find this distance to be 8.48 chs. the distance East of the 2nd mile stone for the point for closing Cor of the West boundary of T. 35 N R 19 W.

From the 2nd Mile Stone on the North Boundary of Nebraska, which is a quartzite 3½ ft x 10 x 10 ins above ground marked S.D. on N. N on S. and 2 M on W. faces. I run East along said line 8.48 chs. (My Chainman) and set a Sandstone 20 x 14 x 4 ins - 15 ins in the ground for Closing Cor. of Tp 35 N Rs 19 and 20 W. marked

C.C. T. 35 N. and 3 grooves on S. face

R 19 W, and 6 grooves on E face and

R 20 W and 6 grooves on W. face; dig pits 30 x 24 x 12 ins, crosswise on each line, E and W. 4 ft and S. of stone 8 ft dist; and raised a mound of earth 5 ft base 2½ ft high S. of Cor 8 ft dist.

At the above described Cor. I set off 43° N on lat arc and 15° 52' 30" N on decl arc and with the Solar determined true Meridian at 7h 30m a.m. local. Longitude 99° 36' 30" W

The magnetic bearing of the true Meridian is N 12° 30' W. which reduced by table page 100 gives for mean mag. declination 12° 24' E

28 West Boundary of T 35 N R 19 W Continued

Chains	
	Thence I run
	South bet secs 19 and 24
	over rolling ground
	Ascend
3.00	Top of knoll descend
7.30	Road bears N 25° E and S 25° W.
19.14	Set a Sandstone 15x14x2ins - 10ins in the ground for 1/4 sec cor. Marked 1/4 on W. face; dig pits 18x18x12ins N and S of Stone 3 ft dist; and raise a mound of earth 3½ ft base 1½ ft high W. of cor.
25.15	Top of hill descend
27.95	Intersect the Left-Bank of Kuya Paha River on top of high steep bluff 40 ft higher than river
	Set a Sandstone 15x13x4ins - 10ins in the ground for Meander Cor of fractional Secs. 19 and 24, Marked M.C on S face, 6 grooves on E face, and 6 grooves on W. face; dig a pit 36x36x12ins 8 ft N of Stone; and raise a mound of earth 4 ft base 2 ft high N of Cor.
	Land rolling
	Soil Sandy & rate
	Timber - Some brush along river bank

To connect the above Meander Cor. with the survey on Right-bank of Kuya Paha River I go to the Cor. of Secs 19.24.25 and 30 S. of the River and run North bet. secs 19 and 24 and at 22.00 chs find the Meander Cor. near the top of the 2nd bench - Red cedar post Marked M.C. in Mound of earth and pit south of Cor. I continue North across the River to 48.64 chs. thence East 8.39 chs to the Meander Cor, on left-bank, of fract secs 19 and 24. Therefore from M.C. on left bank, S 17° 29' W, 27.93 chs. to M.C. on right bank.

I add the following distances on the opposite sides of the River to wit

From Cor of Secs 19.24.25 and 30 N to M.C. on R. bank	22.00 chs
From Meander Cor. across River	26.64 chs
From Meander Cor on left bank to Closing Cor	27.95 chs
Total distance	76.59 chs
Subtract - (Chs. of T 35 N R 19 W)	59.14 chs
Difference in latitude is	17.45 chs
Difference in departure is	8.39 chs

West Boundary of T 35 N. R 19 W. Continued 29

Note This morning I compared my measuring chain with the Standard Chain and find it correct

August 9 1895

Boundaries of T 35 N R 19 W.

Latitudes, departures and Closing Errors.

Lines designated	True Bearing	Distance	Latitudes N.	Latitudes S.	Departures E.	Departures W.
S. bdy. Sec 25 and 26	West	160.00				160.00
S. bdy Sec 22.21 & 20	West	240.00				240.00
S. bdy Sec 19	West	57.50				57.50
Meanders Sec 19		47.18	32.83	1.65	4.09	24.25
East bdy Sec 36	North	49.50	49.50			
West bdy Sec 36	N 0° 2' W.	80.00	80.00			.02
West bdy of T. 35 N R 19 W	North	27.95	27.95			
N. bdy T. 35 N R 19 W	East	479.10			479.10	
E. bdy T. 35 N R 19 W	South	188.64		188.64		
Convergency					.12	
	Totals - - - -		190.28	190.29	483.32	481.77
				190.27	481.77	
	Error in latitude - - - - -			.01		
	Error in departure - - - - - - - - -				1.54	

Note. In the above table I have called each Mile of N. Bdy. 80.00 chs. My measurement of the 3rd Mile this morning is 79.79 chs. Should similar conditions for rust on each of the other 5 Miles the excess in East Departure would be practically accounted for.

General Description.

The land in this Tp consists of Creek and River Valley - table land and high ridges and peaks.

The soil of the River Valley is sandy and clay loam and is 2nd rate and 3rd rate.

The Creek Valleys are generally very narrow and have clay soil and good 2nd rate

The tableland is gravelly and clay - the clay land is generally of good quality 2nd rate. The gravelly land is 3rd and 4th rate

The ridges and peaks are found mostly in the eastern part and are nearly all of the same height as determined by observing them from different stations through telescope accurately leveled. The top of these peaks and ridges are protected by a cap of northern whitewood.

50

The creeks have their source in South Dakota in springs, but this year owing to excessive and continued droughts for the last two or three years there is no running water

There is some brush-plum, willow and cottonwood and a few cottonwood trees along Niya Paha River and some brush along the creeks

The good land is mostly occupied by settlers who have small fields of grain

Some of the farmers along the River are preparing to irrigate their lands.

Robert Harvey
U.S. Deputy Surveyor
acting as Surveyor

Alfred W. Gunnar
U.S. Deputy Surveyor
and acting in Capacity of Topographer

List of Names.

A list of the names of the individuals employed by Robert Harvey and Alfred W. Gunnar, U. S. Deputy Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of the lines between ranges 13 and 14, 14 and 15, 15 and 16, ~~16 and 17~~ 17 and 18, 18 and 19 and 19 and 20: all through fractional township 35 north of ranges 13, 14, 15, 16, 17, 18, 19 and 20 west of the

6th Principal Meridian, in the State of Nebraska, showing the respective capacities in which they acted:

Clifford R. Norton	Chainman
Herbert J. Paul	Chainman
Clayton D. Norton	axeman
Howard J. Sheppard	axeman
William L. Stitt	Flagman
Lewis M. Williams	Flagman

Final Oath of Assistants:

We hereby certify that we assisted Robert Harvey and Alfred W. Gunnar, U. S. Deputy Surveyor, in surveying all those parts or portions of the lines between ranges 13 and 14, 14 and 15, 15 and 16, ~~16 and 17~~ 17 and 18, 18 and 19 and 19 and 20 west: all through township 35 north of ranges 13, 14, 15, 16, 17, 18, 19 and 20 west of the

6th Principal Meridian, State of Nebraska, which are represented in the foregoing field notes as having been surveyed by him and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the U. S. Surveyor General for South Dakota

Clifford R. Norton	Chainman
Herbert J. Paul	Chainman
Clayton D. Norton	Axeman
Howard J. Sheppard	Axeman
William L. Stitt	Flagman
Lewis M. Williams	Flagman

Subscribed and sworn to before me this 23rd day of August, 1895

SEAL

W. Paul
Notary Public

My commission expires Aug. 13, 1897

6—151

Final Oath of U. S. Deputy Surveyor.

I, Robert Harvey, U. S. Deputy Surveyor, do solemnly swear that, in pursuance of instructions received from Richard B. Hughs, U. S. Surveyor General for South Dakota, bearing date of the 3rd day of April, 1895, I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the U. S. Surveyor General for South Dakota, the surveying manual, and the laws of the United States, surveyed all those parts or portions of lines between ranges 13 and 14, 14 and 15, 15 and 16, ~~16 and 17~~, 17 and 18, 18 and 19 and 19 and 20: all through fractional township 35 north of ranges 13, 14, 15, 16, 17, 18, 19 and 20 west of the 6th Principal Meridian, in the State of Nebraska, as are represented in the foregoing field notes as having been surveyed by me, and under my directions; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the surveying manual, printed instructions, the special written instructions of the U. S. Surveyor General for South Dakota and in the specific manner described in the field notes, and that the foregoing are the true field notes of such survey; and should any fraud be detected, I will suffer the penalty of perjury under the provisions of an Act of Congress approved August 8, 1846.

Robert Harvey

U. S. Deputy Surveyor.

Subscribed and sworn to before me this 21st day of October, 1895

SEAL

W. Paul
Notary Public
My commission expires Aug. 13, 1897

Approval.

Office of the U. S. Surveyor General,

....., 18 .

The foregoing field notes of the survey of .....

..... executed by

under his Contract No. ....., dated ....., 18 , having been critically examined, the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

U. S. Surveyor General.

I certify that the foregoing transcript of the field notes of the above-described surveys in ....., has been correctly copied from the original notes on file in this office.

U. S. Surveyor General.

Final Oaths of Deputy Surveyors and their Assistants.

LIST OF NAMES.

A list of the names of the individuals employed by ....., United States Deputy Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of ..... showing the respective capacities in which they acted:

....., *Chainman.*
....., *Chainman.*
....., *Moundman.*
....., *Moundman.*
....., *Axman.*
....., *Axman.*
....., *Flagman.*

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted ....., United States Deputy Surveyor, in surveying all those parts or portions of the ..... of the ..... base and ..... meridian, ... of ....., which are represented in the foregoing field notes as having been surveyed by him and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the United States Surveyor General for .....

....., *Chainman.*
....., *Chainman.*
....., *Moundman.*
....., *Moundman.*
....., *Axman.*
....., *Axman.*
....., *Flagman.*

Subscribed and sworn to before me this ..... day of ....., 189 .

SEAL

Final Oath of United States Deputy Surveyor.

We Robert Harvey and Alfred W. Gumaer United States Deputy Surveyors do solemnly swear that, in pursuance of ~~instructions~~ a Contract received from Richard B. Hughes, United States Surveyor General for South Dakota, bearing date of the third day of April, 1895 We have well, faithfully, and truly, in ~~my~~ our own proper persons and in strict conformity with the instructions furnished by the United States Surveyor General for South Dakota, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of the West boundaries of fractional Townships No 35 North Ranges No's 13, 14, 15, 17, 18, and 19 West

all north of the base line ~~base~~ and West of the principal meridian, in the State of Nebraska, which are represented in the foregoing field notes as having been surveyed by ~~me~~ us, and under ~~my~~ our directions; and We do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the United States Surveyor General for South Dakota and in the specific manner described in the field notes, and that the foregoing are the *true* field notes of such survey; and should any fraud be detected We will suffer the penalty of perjury under the provisions of an Act of Congress approved August 8, 1846. And that said field notes comprises Book A

Robert Harvey
Alfred W Gumaer
United States Deputy Surveyors

Subscribed by said Robert Harvey and Alfred W Gumaer, United States ~~Deputy~~ Surveyors, and sworn to before me this 21 day of October, 1895.

W J Paul, Notary Public
My commission expires Aug 13 1897

SEAL

APPROVAL.

Office of the United States Surveyor General,
Huron So Dak. Dec. 17th, 1896

The foregoing field notes ~~of the survey of~~ contained in one book lettered "A" of the survey of the West boundaries of fractional Townships No 35 North Ranges No's 13, 14, 15, 17, 18, and 19 West of the 6th principal Meridian in the State of Nebraska

Robert Harvey and Alfred W. Gumaer executed by their joint under ~~his~~ Contract No. 107, dated April 3rd, 1895, having been critically examined, the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

Richard B Hughes
United States Surveyor General.

I certify that the foregoing transcript of the field notes of the above-described surveys in the State of Nebraska, has been correctly copied from the original notes on file in this office.

Richard B Hughes
United States Surveyor General.

Received with letter of A. B. Hughes, Surveyor General, So. Dak., dated Feb. 8, 1897

(4—679.)

BOOK E

FIELD NOTES

OF THE SURVEY OF

The Second Guide Meridian West through Township Thirty-five (35) North between ranges Sixteen (16) and Seventeen (17) West

Of the 6th Principal Meridian,

in the State of Nebraska

AS SURVEYED BY

Robert Harvey and Alfred H. Guernsey, U. S. Deputy Surveyors

Under ~~his~~ joint Contract No. 107, dated April 3rd, 1895

Survey commenced July 19th, 1895.

Survey completed July 20th, 1895.

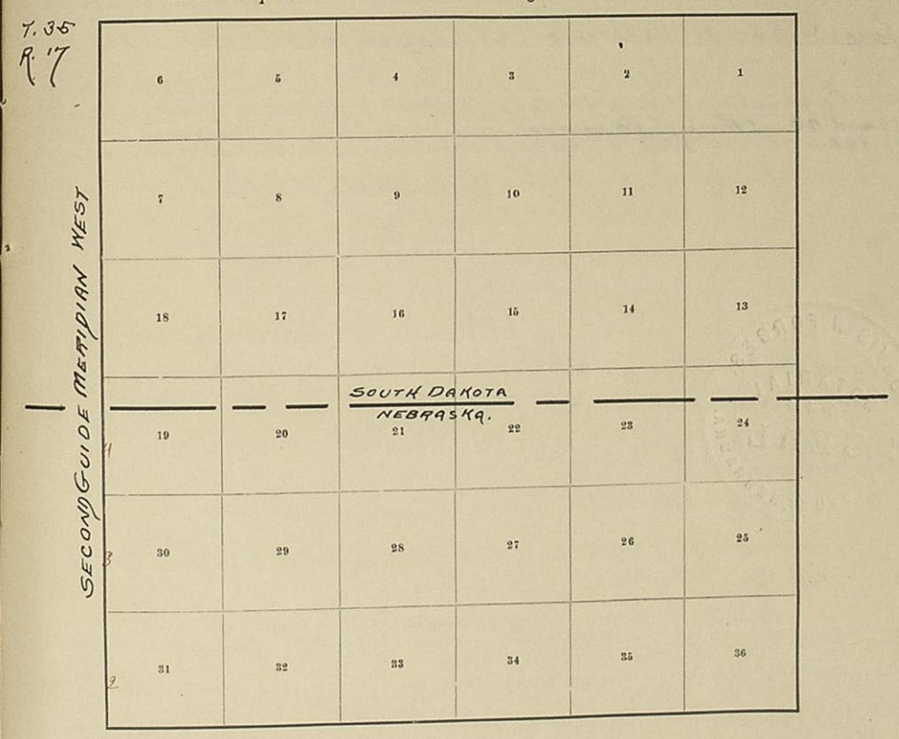
(12593—2,000.)

Names and Duties of Assistants.

Pelford N. Norton	Chainman
Herbert J. Paul	Chainman
Clayton J. Norton	Chainman
Floran E. Harvey	Chainman 2d Moundman
Howard J. Sheppard	Axeman 2d Moundman
William L. Hitt	Flagman
Lewis M. Williams	Flagman

INDEX DIAGRAM.

Township 35, Range 16



Meanders Page

Preliminary Oaths of Assistants.

We, Clifford H Norton. Herbert J Paul
Clayton J. Norton and Floran E Harvey

do solemnly swear that we will well and faithfully execute the duties of chain ~~carriers~~ men; that we will level the chain over even and uneven ground, and plumb the tally-pins either by sticking or dropping the same; that we will report the true distances to all notable objects, and the true lengths of all lines that we assist in measuring, to the best of our skill and ability, and in accordance with instructions given us in the survey of the Second Guide Meridian West through Township Thirty-five (35) N between Ranges Sixteen (16) and Seventeen (17) West of the 6th P Meridian and the lines between ranges 13 and 14, 14 and 15, 15 and 16, 17 and 18, 18 and 19 and 19 and 20 all through fractional townships 35 N. of ranges 13, 14, 15, 16, 17, 18, 19 and 20 West of the 6th principal meridian in the State of Nebraska

Clifford H. Norton, Chainman.
Herbert J. Paul, Chainman.
Clayton J. Norton, Chainman and Mountman
Floran E. Harvey, Chainman.

Subscribed and sworn to before me this 29th day of June, 1895

Doris W. Forbes
Notary Public

My Commission expires Dec. 9, 1897.

We, Howard J. Sheppard. Lewis M. Williams and William L Stitt

do solemnly swear that we will well and truly perform the duties of axemen, mountman and flagman in the establishment of corners and other duties, according to instructions given us, ~~and~~ to the best of our skill and ability, in the survey of the Second Guide Meridian West through Township Thirty five (35) N between Ranges sixteen (16) and Seventeen (17) west of the 6th P. Meridian and the lines between ranges 13 and 14, 14 and 15, 15 and 16, 17 and 18, 18 and 19, 19 and 20 all through fractional townships 35 N of ranges 13, 14, 15, 16, 17, 18, 19 and 20 West of the 6th principal Meridian in the State of Nebraska

Subscribed and sworn to before me this 29th day of June, 1895

Clayton J Norton, Axeman and Mountman
Howard J Sheppard, Axeman and Mountman
Lewis M. Williams Flagman
William L. Stitt Flagman

Doris W. Forbes
Notary Public

My Commission expires Dec. 9, 1897.

2nd Guide Meridian West through T. 35 N. between Rs. 16 and 17 W

Survey commenced July 19 1895, and executed with a Heller & Brightly Transit No. 6602: The horizontal limb being provided with two opposite verniers reading to 20" of Arc, and the latitude and declination arc reading to single minutes of arc

I examine the adjustments of the transit and find the levels and collimation to be correct; then to test the Solar apparatus by comparing its indications resulting from Solar observations made during A.M. and P.M. hours with a true meridian determined by observations on Polaris, I proceed as follows

At the Cor. of Tps 34 and 35 N. Rs 16 and 17 W. Latitude 42° 57' 37" N. Longitude 99° 15' 24" W. at 6h 30m P.M. l.m.t. I set off 42° 57' 37" N on Lat. Arc, and 20° 49' 56" N on decl arc. and mark a true Meridian thus determined with the Solar by a small groove cut on a stone set firmly in the ground on a low sharp ridge 8.39 chs South of the Cor.

At 11h 34m P.M. l.m.t. by my watch which I compared with the Solar this afternoon at 6h 30m I observe Polaris at Eastern elongation in accordance with the Manual of Instructions and mark a point in the line thus determined on a plug driven in the ground 8.35 chs. S of my Station

July 19 1895

July 20. at 5h 30m A.M. l.m.t. I lay off the azimuth 1° 42' 7 to the West and mark the True Meridian thus determined, by cutting a small groove in the stone set July 19 on which the True Meridian falls 0.6 ins West of the mark determined with the Solar July 19

At 6h 15m A.M. l.m.t. I set off 42° 57' 37" N on the Lat. arc and 20° 42' 40" N on decl arc determine with the Solar a true meridian and mark a point in the line thus determined by cutting a small groove in the stone 8.39 chs S of my station; this mark falls 0.5 ins. West of the True Meridian established by the Polaris Observation

The Solar apparatus by P.M. and A.M. observations defines positions for true Meridians respectively 0' 18" East and 0' 15" West of True Meridian established

by Polaris Observations, when referred to the South
Therefore I conclude the adjustments of the instrument are satisfactory. Instrument approved by Surveyor-General S.D. June 21. 1895
The Magnetic bearing of the Guide Meridian at 6h 30m am is N 12° 18' W. The angle thus determined reduced by table, page 100 gives the Mean Magnetic decl. 12° 15' E.

I begin at the cor of Tps 34 and 35 N. Rs 16 and 17 W which is a hard sandstone 10 x 15 x 6 ins above ground firmly set marked and witnessed as described by the Surveyor General
The hack-berry B.T. has been cut down but the stump bears N 75° 33' E 175 lks dist.
Note - This morning I compare my measuring chains with the standard chain and find them to be correct.
North bet. Secs. 31 and 36.
over rough, mountainous land
ascend steep hill
3.00 Top of ridge 25 feet higher than Cor. bears N E and S W
7.70 Short gulch course S W
14.00 Top of ridge bears E and W
20.80 Ravine 30 ft deep. Course N 62° W
21.40 Ravine 30 ft deep. Course S.W.
37.30 Ravine Course W

Difference between measurements of 40.00 chs by two sets of Chainmen is 4 lks: position of middle point
By 1st Set 40.02 chs
By 2d Set 39.98 chs the mean of which is
40.00 Set a sandstone 14+9+5 ins - 9 ins in the ground for 1/4 Sec Cor. marked 1/4 on W face: dig pits 18+18+12 ins N and S. of stone 3 ft dist. and raise a mound of earth 3½ ft base 1½ ft high W of cor.
45.05 Road bears N 71° E and S 71° W.
45.30 Drain course S 70° W
46.00 Enter table land, leave Mountainous land
59.08 Enter Cornfield N W and S E.
64.70 Leave same bears E & W
79.50 Begin descent over gentle slope
Difference between measurements of 80.00 chs by two sets of Chainmen is 8 lks: position of middle point
By 1st set 80.04 chs.

By 2nd set 79.96 chs: the mean of which is
80.00 Set a sandstone 16+12+7 ins - 10 ins in the ground for Cor of Secs. 25, 30, 31 and 36 marked 16 W on E. 17 W on W faces 1 notch on S and 5 notches on N edges: dig pits 18+18+12 ins in each Sec. 5½ ft. dist. and raise a mound of earth 4 ft base 2 ft high W of Cor.
Land S 46 chs broken, mountainous, gravelly soil
N. 34 chs smooth table land
Soil clay and gravel. good 3rd rate
No timber Mountainous land 46. chs

North bd. secs 25 and 30
over gently rolling ground
Descend
6.10 Drain course N.E. 30 ft lower than Cor
7.00 Drain course S.E.
Ascend.
21.00 Top of ridge, 25 ft high - descend
30.10 Drain course S 48° E.
Difference between measurements of 40.00 chs by two sets of Chainmen is 3 lks. position of middle point
By 1st Set 40.01½ chs.
By 2nd set 39.98½ chs The mean of which is
40.00 Set a sandstone 16+11+5 ins: 10 ins in the ground, for 1/4 Sec. Cor. marked 1/4 on W face: dig pits 18+18+12 ins. N and S of stone 3 ft dist. and raise a mound of earth 3½ ft base 1½ ft high W of Cor.
50.00 Wagon road bears N 87° W. and S. 87° E
58.90 Wagon road bears N 88° W and S 88° E
Difference between measurements of 80.00 chs by two sets of Chainmen is 2 links: position of middle point
By 1st Set 80.01 chs
By 2d Set 79.99 chs: The mean of which is
80.00 Set a sandstone 15+10+5 ins - 10 ins in the ground for Cor of Secs 19, 24, 25 and 30: marked 16 W on E. 17 W on W faces - 2 notches on S. and 4 notches on N. edges: dig pits 18+18+12 ins in each Sec. 5½ ft dist: and raise a mound of earth 4 ft base 2 ft high W of Cor.
At this Cor. Fred Ehlrich's house bears N 63½° E

Land on S 40.00 chs rolling and broken

Soil gravel and Clay – 3rd rate
N 40.00 chs undulating – Soil Clay 1st rate
No timber

North bet Secs. 19 and 24
over smooth level table land
Difference between measurement of 40.00 chs by two sets of Chainmen is 1 link position of middle point
By 1st set 40.00½ chs
By 2nd set 39.99½ chs The mean of which is
40.00 Set a sandstone 16×12×5 ins – 10 ins in the ground for 1/4 Sec. Cor. marked ¼ on W face; dig pits 18×18×12 ins N, and S of stone 3 ft dist. and raise a mound of earth 3½ ft base 1½ ft high W. of Cor.
Difference between measurements of 58.02 chs by two sets of Chainmen is 3 inches which I discard
58.02 Intersect the North Boundary of Nebraska 6.87 chs East of the 20th mile stone which is a quartzite 3½ ft × 10 × 10 ins above ground, marked S.D on N. N on S. and 20 M on W. faces
Set a sandstone 13×11×8 ins – 8 inches in the ground for closing Cor. of T. 35 N. Rs 16 and 17 W. marked C.C. 35 N. and 3 grooves on S. face 16 W and 6 grooves on E. 17 W and 6 grooves on W faces: dig pits 30×24×12 ins crosswise on each line E and W 1½ ft and S of stone 8 ft dist. and raise a mound of earth 5 ft base 2½ ft high S of Cor.

Land – Smooth level table land
Clay soil 2nd rate
No timber.

July 20 1895.

Boundaries of T. 35 N. R. 16 W.
Latitudes Departures and Closing Errors

Lines designated	True bearing	Distance	Latitude N	Latitude S	Departures E	Departures W
* S bdy T 35 N R 16 W	S 89° 55' W	479.55 ch		.72		479.55 ch
W bdy T 35 N. R 16 W		218.02 ch	218.02 ch			
N " " " " " "		480.02 "			480.02	
E " " " " " "		218.02 "		218.02		
Convergency					.30	
			218.02	218.74	480.32	479.55
Dif in Lat.				218.02	479.55	
				.72		
				Dif in Dep.	.77	

* See Statement on next page

General Description

This Township is very rough and broken along the South part; The North part is generally gentle rolling table land.
The South tier of sections is well watered by small spring brooks: they have narrow valleys of good soil and produce good grass.
There is no timber excepting a few clumps of willows along the spring brooks.
There are settlers occupying nearly all the good land in the Township.

Statement

To satisfy myself as to the course and length of S. Bdy. of Tp 35 N R 16 W. On July 19th 1895 I set my instrument over the cross cut on top of the stone in the corner of Tps 34 and 35 N Ranges 15 and 16 W. and from the true meridian turn an angle of 90° to the West and run W. on a tangent line and at 80.14 chs fall 6 links N. of the corner of Secs 1. 2. 35 and 36. the course of the S. Bdy of sec 36 is therefore S 89° 57' W. At said corner
I determine a true meridian with the Solar and run W on the S. Bdy of Sec. 35 and at 80.15 chs. fall 3 links N of the Cor. of Secs. 2-3-34 and 35. The course of the S. Bdy of Sec. 35 is therefore S 89° 58' W. At said corner I determine a true meridian with the Solar and run W. on S. Bdy of Sec. 34 and at 80.12 chs. intersect cor. of Secs. 34, 33 and 34. The course of the S. Bdy of Sec. 34 is therefore W. I continue my line on S Bdy of Sec. 33 and at 80.14 chs fall 23 links N of the Cor. of Secs. 4. 5. 32. and 33. The course of the S. Bdy of Sec 33. is therefore S 89° 49' W. At said Cor. I determine a true meridian with the Solar and run W. on S. Bdy of Sec. 32 and at 80.17 chs fall 23 links N of the Cor. of Secs. 5 6. 31 and 32. The course of the S Bdy of Sec. 32 is therefore S 89° 50' W.

2nd Guide Meridian W. through Tp 35 N Rs 16 and 17 W continued

at said corner I determined a true meridian with the solar and run W. on S. B'dy of Sec. 31. and at 78.83 chs fall 9 links N. of the Cor. of Tp 34 and 35 N Rs 16 and 17 W. The course of the S B'dy of Sec 31 is therefore S. 89° 56' W. and the total length of the S. B'dy of the Tp is 479.55 chs this distance I place in the Column of W Dep's in the table of Lat's Dep's and closing errors on page 5. The average course of the S. B'dy of the Tp is therefore S 89° 55' W. and the correction for Latitude I place in the column of S Lat. in said table.

For a test of instrument subsequent to this survey I refer to the test made July 20th 1895 and recorded in my Notes of T. 35 N. R. 16 W.

Robert Harvey
U. S. Deputy Surveyor
Acting as Surveyor
Alfred W Tumaes
U S Deputy surveyor and
Acted as Moundman in the survey of this line

List of Names.

A list of the names of the individuals employed by Robert Harvey and Alfred W. Sumner, U. S. Deputy Surveyors to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of the Second Guide Meridian West through Townships thirty five (35) N between Ranges sixteen (16) and seventeen (17) West

of the 6th Principal Meridian, in the State of Nebraska, showing the respective capacities in which they acted:

Clifford H. Norton	Chainman
Herbert J. Paul	Chainman
Clayton J. Norton	Chainman
Floran E. Harvey	Chainman
Howard J. Sheppard	Axeman and Mounduman
William R. Hill	Flagman
Lewis M. Williams	Flagman

Final Oath of Assistants:

We hereby certify that we assisted Robert Harvey and Alfred W. Sumner, U. S. Deputy Surveyors in surveying all those parts or portions of the Second Guide Meridian West through Township thirty five (35) N between Ranges sixteen (16) and seventeen (17) West of the 6th Principal Meridian, in the State of Nebraska, as are represented in the foregoing field notes as having been surveyed by ~~him~~ and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the U. S. Surveyor General for South Dakota

Clifford H. Norton	Chainman
Herbert J. Paul	Chainman
Clayton J. Norton	Chainman
Floran E. Harvey	Chainman
Howard J. Sheppard	Axeman and Mounduman
William R. Hill	Flagman
Lewis M. Williams	Flagman

Subscribed and sworn to before me this 23rd day of August, 1895.

SEAL

H. J. Paul
Notary Public

My commission expires August 13th 1897

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Sworn to by Alfred W. Sumner U.S. Deputy Surveyor

Final Oath of U. S. Deputy Surveyor.

I, Robert Harvey and Alfred W. Gunnach, U. S. Deputy Surveyor, do solemnly swear that, in pursuance of ~~instructions~~ a contract received from Richard B. Hughs, U. S. Surveyor General for South Dakota, bearing date of the 13th day of April, 1895, I have well, faithfully, and truly, in my own proper person, and in strict conformity with the instructions furnished by the U. S. Surveyor General for South Dakota, the manual of instructions surveying ~~manual~~, and the laws of the United States, surveyed all those parts or portions of the lines between ranges 13 and 14, 14 and 15, 15 and 16, 16 and 17, 17 and 18 and the completion of the lines between ranges 18 and 19 and 19 and 20, all through fractional township 35 north; the subdivision and meander lines of township 35 north of ranges 13, 14, 15, 16 and 17 and the completion of the subdivision and meander lines of fractional township 35 north of ranges 18, 19 and 20: all west of the 6th Principal Meridian, in the State of Nebraska, as are represented in the foregoing field notes as having been surveyed by me, and under my directions; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the manual of surveying ~~manual, printed~~ instructions, and the special written instructions of the U. S. Surveyor General for South Dakota and in the specific manner described in the field notes, and that the foregoing are the original true field notes of such survey; and should any fraud be detected, I will suffer the penalty of perjury under the provisions of an Act of Congress approved August 8, 1846. Said field notes are comprised of one book lettered E.

Robert Harvey
Alfred W. Gunnach
U. S. Deputy Surveyors.

Subscribed and sworn to before me this 21st day of October, 1895

SEAL

W. J. Paul
Notary Public
My commission expires Aug 13, 1897

Approval.

Office of the U. S. Surveyor General,
Huron So Dak, 1896

The foregoing field notes ~~of the survey of~~ Comprised in one Book lettered "E" of the survey of

executed by

under his Contract No. ....., dated ....., 18 , having been critically examined, the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

U. S. Surveyor General.

I certify that the foregoing transcript of the field notes of the above-described surveys in ....., has been correctly copied from the original notes on file in this office.

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U. S. Surveyor General.

Book E.

Final Oaths of Deputy Surveyors and their Assistants.

LIST OF NAMES.

A list of the names of the individuals employed by ....., United States Deputy Surveyor, to assist in running, measuring, and marking the lines and corners described in the foregoing field notes of the survey of ..... showing the respective capacities in which they acted:

....., Chainman.
....., Chainman.
....., Moundman.
....., Moundman.
....., Axman.
....., Axman.
....., Flagman.

FINAL OATH OF ASSISTANTS.

We hereby certify that we assisted ....., United States Deputy Surveyor, in surveying all those parts or portions of the ..... of the ..... base and ..... meridian, ... of ....., which are represented in the foregoing field notes as having been surveyed by him and under his direction; and that said survey has been in all respects, to the best of our knowledge and belief, well and faithfully surveyed, and the corner monuments established, according to the instructions furnished by the United States Surveyor General for .....

....., Chainman.
....., Chainman.
....., Moundman.
....., Moundman.
....., Axman.
....., Axman.
....., Flagman.

Subscribed and sworn to before me this ..... day of ....., 189 .

SEAL

Final Oath of United States Deputy Surveyor.

We Robert Harvey and Alfred W. Gumaer, United States Deputy Surveyors, do solemnly swear that, in pursuance of ~~instructions~~ a contract received from Richard B. Hughes, United States Surveyor General for South Dakota, bearing date of the third day of April, 1895, I have well, faithfully, and truly, in ~~my~~ our own proper persons and in strict conformity with the instructions furnished by the United States Surveyor General for South Dakota, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of the Second Guide Meridian West between Ranges 16 and 17 West through Fractional Township No. 35 North

of the base line ~~base~~ and 6th principal meridian, in the State of Nebraska, which are represented in the foregoing field notes as having been surveyed by us ~~me~~, and under our ~~my~~ directions; and we do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the United States Surveyor General for South Dakota and in the specific manner described in the field notes, and that the foregoing are the *true* field notes of such survey; and should any fraud be detected we will suffer the penalty of perjury under the provisions of an Act of Congress approved August 8, 1846. an that carefull notes and prices Book E

Robert Harvey
Alfred W. Gumaer
United States Deputy Surveyors

Subscribed by said Robert Harvey and Alfred W. Gumaer, United States Deputy Surveyors, and sworn to before me this 21st day of October, 1895.

N. J. Paul, Notary Public

SEAL

my commission Expires Aug. 13th 1897

APPROVAL.

Office of the United States Surveyor General,

Huron So. Dak Dec. 12th, 1896

The foregoing field notes ~~of the survey of~~ contained in one Book lettered "E" of the Survey of the Second Guide Meridian West, through Township 35 North between Ranges 16 and 17 West of the 6th principal Meridian in the State of Nebraska

executed by Robert Harvey and Alfred W. Gumaer their joint under ~~his~~ Contract No. 107, dated April 3rd, 1895, having been critically examined, the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

Richard B. Hughes
United States Surveyor General.

I certify that the foregoing transcript of the field notes of the above-described surveys in the State of Nebraska, has been correctly copied from the original notes on file in this office.

Richard B. Hughes
United States Surveyor General.

General Land Office • Original Field Notes

Book Number

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The images in this file are photographs of the notes of the original surveys of the State of Nebraska on file in the Office of the Nebraska State Surveyor located in Lincoln, Nebraska.

The original surveys in Nebraska began in the mid 1850's and were completed in the mid 1880's. The Nebraska office of the Surveyor General was closed June 30, 1886.