

## Chains

Survey commenced Oct. 9, 1914; and executed with a Young and Sons transit No. 8518, with Smith solar attachment. The horizontal limb is provided with two double verniers, placed opposite to each other, reading to single minutes of arc, which is also the least count of the verniers of the latitude and decl. arcs.

The instrument was approved by Assistant Supervisor of Surveys G.D.D. Kirkpatrick.

I examine the adjustments of the transit and correct the level and collimation errors, then to test the solar apparatus, by comparing its indications, resulting from solar observations made during a.m. and p.m. hours, with a meridian determined by observation on Polaris, I proceed as follows:

At the cor. of Tps. 29 and 30 N., Rgs. 47 and 48 E.; latitude  $40^{\circ} 24' N.$ , longitude  $116^{\circ} 37' W.$ ; which corner has been previously described, I set off  $40^{\circ} 24' N.$  on the lat. arc,  $6^{\circ} 12' S.$  on the decl. arc and at 4h., P.M., l.m.t., determine a meridian with the solar, and mark a point thereof, on a stone firmly set in the ground, 5 chs. N. of the cor.

At 6 h. 22m., p.m., l.m.t., I observe Polaris at eastern elongation in accordance with Manual of Instructions, and mark a point in the line thus determined on a peg driven in the ground, 5 chs. N. of the station.

Oct. 9, 1914.

Oct. 10, 1914.

At 7h.45m., a.m., l.m.t., I lay off the azimuth of Polaris  $1^{\circ} 31'$  to the west, and mark the meridian thus determined by cutting a small groove in the stone, set Oct. 9, on which the meridian falls 0.7 ins. east of the mark determined by the solar.

At 8h., a.m., l.m.t., I set off  $40^{\circ} 24' N.$  on the lat. arc,  $6^{\circ} 27' S.$  on the decl. arc; and mark a point in the meridian determined with the solar, by a cross on the stone already set 5 chs. N. of my station; this mark falls 1.20 ins. east of the meridian established by the Polaris observation. The solar apparatus by p.m. and a.m., observations, defines position for meridians, respectively about  $0' 36''$  west and  $1' 4''$  east of the meridian established by the Polaris observations, therefore, I conclude that the adjustments of the instrument are satisfactory.

The magnetic bearing of the true meridian, at 8h.20m., a.m., is  $N. 18^{\circ} 15' W.$ ; the angle thus determined gives the mag. decl.  $18^{\circ} 15' E.$

The lines of this survey were measured with 5 ch. steel tape and clinometer.

From the cor. of Tps. 29 and 30 N., Rgs. 47 and 48 E.; I run

N. bet. secs. 31 and 36, on the E. bdy. of the tp.  
Over somewhat rolling land.

25.50 Small ravine, course E. Ascend slightly, 30 ft. to

40.00 Set an iron post 3 ft. long, 1 in. diam. 24 ins. in the ground for  $\frac{1}{4}$  sec. cor., for sec. 36, with brass cap mkd.,

S 36  $\frac{1}{4}$

1914

and raise a mound of stone, 2 ft. base,  $1\frac{1}{2}$  ft. high W. of cor.

40.05 Wash, course S. E.

53.50 Wash, course S. E.