Retracement of the 7th. Standard Parallel North through R 48 E.

585

Chains

Survey commenced July 19,1914 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 declination 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 p.m. and a.m. hours with a meridian determined by observations on Polaris,I proceed as follows;
At the standard cor. of Tps. 36 N, Rgs. 47 and 48 E, reestablished by me July 30,1914, latitude 40°56'N,longitude 116°36'W.
I set off 40°56'N on the lat. arc; 20°54'N on the decl. arc and determine a meridian with the solar,at 4h.,p.m., l.m.t.,and mark a point thereof,on a stone firmly set in the ground,5 chs, N. of the cor.
At 11h.44m.,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 cor.

July 19,1914.

July 20,1914.
At 7h.50m.,a.m.,l.m.t.,I lay off the azimuth of Polaris 1°32' to the W. and mark the meridian thus determined by cutting a small groove in the stone set July,19., on which the meridian falls 1 in. west of the mark determined by the solar.
At 8h.,a.m.,l.m.t., I set off 40°56'N on the lat.arc, 20°46'N 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 0.75 ins. west of the meridian established by the Polaris observation. The solar apparatus by p.m. and a.m. observations,defines positions for meridians,respectively about 0'54" east and 0'40" west of the meridian established by the Polaris observation; therefore I conclude that the adjustments of the instrument are satisfactory.
The magnetic bearing of the true meridian at 8h.10m. a.m.,is N 18°50'W; the angle thus determined gives the magnetic declination 18°50'E.

From the cor. of Tps. 36 N, Rgs. 47 and 48 E; I retrace E. on the 7th Standard Parallel North; south of sec. 31.

Since I have but one set of chainmen,I measure the distances twice with this same set,and take the mean of their measurements;instead of using two sets of chainmen.

Difference between measurements of 40.04 chs. twice by the same set of chainmen is 10 lks.;

position of middle point

By 1st measurement 40.09 chs.

By 2nd. measurement 39.99 chs.

the mean of which is