

East Boundary T. 19 N., R. 47 East.

1

## Chains

Survey commenced July 29, 1915 and executed with a Young and Sons transit No. 8589 and Keuffel and Esser transit No. 20575 both instruments are provided with Smith Solar attachments. The horizontal limbs are provided with two double verniers placed opposite to each other and reading to single minutes of arc, which is also the least count of the verniers of the latitude and declination arcs. Prior to surveys on Group No. 36 the instruments were examined and approved by G.D.D. Kirkpatrick, Assistant Supervisor of surveys for the states of Utah and Nevada. All measurements on these surveys were made with a 5-ch. steel Lallie tape and the slope angles read with a clinometer.

July 29, 1915.

Observation on Polaris made by H.W.Reppert.

Aug. 21, 1915: I examine the adjustment of the transit No. 8589 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 an observation on Polaris, I proceed as follows.

At a point in camp which is situated on the range line between Rs. 46 and 47 E., T. 19 N., near the  $\frac{1}{4}$  sec. cor. of secs. 13 and 18, Latitude  $39^{\circ} 31' N.$ , Longitude  $116^{\circ} 44' W.$ , I set up transit No. 8589 and at 9h.30m., p.m., l.m.t., fix the vertical crosswire of the transit on Polaris and begin following it in its progress eastward and when the star reaches its maximum position in azimuth which occurs at about 9h.36m., p.m., l.m.t., by my watch which is correct, I plunge the telescope and mark the line thus determined by a tack driven in a hub set approximately 5 chs. N. of my station. I immediately reverse the telescope and make another observation on the star similar to the first, a point in line on the hub falling about 0.2ins. to the right of the first point. The mean of these two points is taken to mark the most easterly position of the star in azimuth.

Aug. 22, 1915.

Test of instrument Nos. 8595 and 20575.

Tests made by H.W.Reppert and W.R.Johnston.

Aug. 22, 1915: At 7h.45m., a.m., l.m.t., I set off the azimuth of Polaris  $1^{\circ} 29\frac{1}{2}'$  to the west and mark a point in the meridian thus determined by a tack driven in a hub set 5 chs. N. of the station.

At 8h. 00m., a.m., l.m.t., we set both instruments in line with the meridian, set off  $39^{\circ} 31' N.$  on the lat. arcs;  $12^{\circ} 02' N.$  on the decl. arcs, and determine meridians with the solars which fall less than 1' of arc to the right of the meridian determined by Polaris observation. Both instruments were tested in a similar manner at hourly intervals throughout the day and found to vary less than 1' of arc from the true meridian, therefore we conclude that the adjustment of the instruments are very satisfactory.

The magnetic bearing of the true meridian at 8h. 15m., a.m., l.m.t., was  $N.17^{\circ} 30' W.$ , the angle thus determined gives the magnetic variation as  $17^{\circ} 30' E.$

Aug. 22, 1915.

East Boundary T. 19 N., R. 47 E.

Surveyed by W.R.Johnston.

July 28, 1915: At the cor. of Tps. 19 and 20 N., Rs. 47 and 48 E., Latitude by observation  $39^{\circ} 33' N.$ , longitude  $116^{\circ} 37' W.$ , at this corner heretofore described, I set