

## Retracement of the W. Bdy. of T. 32 N., R. 50 E.

31.

Chains Note: For description and test of instrument used by J. C. Clark in T. 32 N., R. 50 E., see Book J, T. 32 N., R. 49 E., Group No. 27.

By Scott P. Stewart. Survey commenced November 11, 1914, and executed with a Buff and Buff transit No. 8028, with a Smith solar attachment. For description and approval of instrument see book "A" of this survey.

I examine the adjustments of the transit and find no 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 my camp, which is in Sec. 17, T. 33 N., R. 50 E., in approximate lat.  $40^{\circ}42'N.$ , Longitude  $116^{\circ}21'W.$ , I set off  $40^{\circ}42'$  on the lat. arc;  $17^{\circ}21'S.$  on the decl. arc; and determine a meridian with the solar at 4 h 0 m, p.m., l.m.t., and mark a point in the line thus determined by a peg driven firmly in the ground about 5 chs. N. of my station.

November 11, 1914.

November 12:

At 4 h 04 m, a.m., l.m.t., I observe Polaris at western elongation and mark the direction of the line thus determined on a peg driven firmly in the ground about 5 chs. N. of my station.

At 8 h 30 m, a.m., l.m.t., I lay off the azimuth of Polaris  $1^{\circ}30'$  to the East and note that this meridian practically agrees with the meridian determined November 11th.

At 8 h 44 m, a.m., l.m.t., I set off  $40^{\circ}42'$  on the lat. arc;  $17^{\circ}16'S.$  on the decl. arc; and determine a meridian with the solar. This meridian agrees with the Polaris meridian; I therefore conclude that the instrument is in good adjustment.

The magnetic bearing of the true meridian at 8 h 40 m, a.m., l.m.t., is  $N.17^{\circ}45'W.$ , the angle thus determined gives the magnetic declination  $17^{\circ}45'E.$

Steel tapes 5 chs. long were used by both parties in all field work, together with clinometers for determining slope angles, and the reduced horizontal distances only appear in the field notes. The tapes were tested during the progress of the survey, comparisons being made with a standard tape, 1 chain long, kept and used for that purpose.

I begin at the Tp. Cor. of Ts. 32 and 33 N., Rs. 49 and 50 E., heretofore described.

Thence I run

South on the E. Bdy. of sec. 1, of T. 32 N., R. 49 E. Over rolling, nearly level land, through dense sage brush.

Ascend gently.

30.00 Top of summit, bears E. and W.

39.64 Fall 16 lks. E. of the original  $\frac{1}{4}$  sec. cor., which is a red volcanic stone, (called slate in the old notes)  $10 \times 6 \times 4$  ins., plainly marked  $\frac{1}{4}$  on one face; no trace of accessories as described by U.S. Surveyor General.

The course of this half mile is  $S.0^{\circ}14'W.$

79.50 Fall 41 lks. E. of the original cor. of secs. 1, 6, 7 and 12, which is a volcanic stone in a small mound of stone, marked with 5 grooves on the S. and 1 on the N. The course of this half mile is  $S.0^{\circ}21'W.$

South on the E. Bdy. of Sec. 12, of T. 32 N., R. 49 E.

39.98 Fall 19 lks. E. of the original  $\frac{1}{4}$  cor. which is a vol-