

T. 45 N., R. 32 E.

The surveys and resurveys, except the west boundary, herein described, were executed with Buff and Buff solar transit, No. 9983, property of the General Land Office. The instrument is described in the field notes of T. 46 N., R. 32 E., this group. The instrument was in good condition, and, having been placed in satisfactory adjustment prior to the beginning of the survey, and tested and found free from appreciable error, was approved by the district cadastral engineer.

June 3, 1938, at camp in sec. 30, T. 45 N., R. 33 E., in latitude $41^{\circ}45'$ N., and longitude $118^{\circ}19'$ W., Polaris was observed at eastern elongation, making 4 readings, two each with the telescope in direct and reversed positions, reading the angles deflected from a signal light on a point to the east about 20 chs. dist.

L.M.T. of observation.....	3h 30m a.m.
L.M.T. of e. elongation.....	3h 4.0m a.m.
Azimuth of Polaris at e.e.....	$1^{\circ}23'$
Mean horizontal angles.....	$90^{\circ}11'$
True bearing of reference point.....	S. $88^{\circ}26'$ E.

After sunrise, each 30 min. from 6:30 a.m. to 10:30 a.m. and from 1:30 p.m. to 6 p.m., I make proper settings on the arcs of the solar attachment and determine the bearing of the reference point. These determinations differ from the bearing determined by the Polaris observation by less than $1'30''$. I conclude the adjustment of the solar attachment is satisfactory.

The directions of all lines were determined by repeated observations with the solar attachment; the lines were carried forward by the method of deflection angles and calculated courses by transit lines, taking the mean of direct and reversed sights at each instrument station. The directions of the lines were repeatedly checked by additional observations with the solar attachment and by Polaris observations and altitude observations of the sun throughout the progress of the survey.

For the resurvey of the E. bdy. of T. 45 N., R. 31 E., and the completion of the subdivision of T. 45 N., R. 32 E., the following solar transits were used respectively by Engineers Swanholm and McConkie in 1939; Buff and Buff #9222 and W. & L. E. Gurley No. 262684. The solar attachments were used for azimuth and the bearings of all lines were checked with and found to agree with the preliminary lines established during preceding seasons.

The latitude of the various stations was verified by meridian observations of the sun at frequent intervals throughout the progress of the survey. The time was verified by frequent comparison with radio standard time signals.

Measurements were made with Lufkin steel tapes, 5 chs. in length, each tape graduated every link for the first 100 lks. and thereafter at intervals of 10 lks. The tapes were tested by comparison with a Lufkin Standard and found correct. Measurements were made on the slope; the vertical angles were determined by clinometers in good adjustment. The field notes show the horizontal equivalents.

DEPENDENT RESURVEY OF THE E. BDY. OF T. 45 N., R. 32 E.

Reestablishment of the survey executed by G. W. Garside and C. S. Preble, Deputy Surveyors, in 1873, under Contract No. 61.

Extensive retracements and exhaustive search revealed no evidence of the original corners. The true lines only of the dependent resurvey are shown in the field notes.

Beginning at the cor. of Ts. 44 and 45 N., Rs. 32 and 33 E., an iron post, 3 ins. diam., set, mkd. and witnessed as described in the official record.

North, bet. secs. 31 and 36.

Asc. 70 ft. over S. slope through sagebrush.