

Blue Creek Reservoir.

south from the proposed reservoir, the <sup>evening</sup> ~~morning~~ of July 13<sup>th</sup> at 11:56 P.M. mean solar time. The mountain standard time of the observation was 0:24 A.M., July 14<sup>th</sup>. The transit set over a peg "A" and carefully leveled, was, at the time above mentioned directed to Polaris, and a peg "B," in line therewith, driven in the ground, about 50 yards distant. A peg "C," was ~~afterwards~~ driven in the ground on line with A, pegs A and B, about 1/4 mile distant and about 5 yards apart. The angle at C, between the peg B, and a flag at Corner N<sup>o</sup>. 26 of the reservoir site measured 72° 47' to the left, which, after deducting the azimuth angle for the year 1894, Latitude 41° 25' North, 1° 41' showed the true course of this initial line to be N 71° 06' W. and from this all other lines of the survey were turned by plate angles.

The mean magnetic variation was found to be 17° 30' E.

The survey of the grade-line of the canal and the waterline of the reservoir, was made with a John Roach engineers level, no number, and a N.Y. leveling rod. The method of running the grade line of the canal was as follows: Peg at Sta. 0, of the canal (on the surface of the ground) at an elevation of 1 ft. above the grade of the bottom of the canal; I place the instrument at a convenient distance, about 200 ft. in the direction of the canal, carefully leveled; the rod being held on a peg driven to the surface of the ground at the aforesaid Sta. 0. The zero of the target, <sup>is</sup> carefully adjusted to a line level with the instrument, and clamped, and the reading on the rod (the distance from the lower end of the rod to the zero of the target) is observed and noted in the field book, which, for convenience, is called a plus reading. A distance of 100 ft. is then measured from Sta. 0, in the direction of the canal, and (for convenience) called Station 1, in the level notes. The target is then carefully adjusted on the rod so that the previous reading shall be increased by .05 of 1 ft. and a point on the surface of the ground at Sta. 1, is found which shall exactly coincide with this second rod reading, and a stake driven (at Sta. 1). A distance of 100 ft. is again measured from Sta. 1, in the direction of the canal, and called Sta. 2. The second reading of the rod is increased by .05 of 1 ft. and a point on the surface at Sta. 2, is found which shall exactly coincide with this third reading, and a stake driven. This operation is repeated ~~to~~ to Sta. 4; ~~wherein the reading~~ is designated as a Minus reading, which would necessarily be .24 of 1 ft. greater <sup>precision</sup> than the plus reading at Sta. 0. (As I proceed <sup>to the terminus</sup> of the canal to its terminus.) The level instrument is then carried forward to about Sta. 6, and the operation repeated as from Sta. 0 to 4. Thus I proceed in the direction of the canal to its terminus, always increasing the rod readings by .05 of 1 ft. for each 100 ft. in length of the canal, driving a stake at each station, ~~or thereby~~ thereby marking a grade line descending at the rate of 3.168 feet per mile. The operation of determining the waterline of the reservoir was similar to that employed on the canal, with the exception that the plus and minus readings were always equal to each other, and the rod readings not changed for each 100 ft. the distances measured, <sup>the angles, and</sup> thereby marking at each corner a level line inclosing, the proposed reservoir.

Field-notes of the survey and establishing of Witness Corners, as required in the survey of the Blue Creek Reservoir, in Box Elder County, Utah, in Tps. 11, N - R. 5, W. Salt Lake Meridian, Date of survey July 15<sup>th</sup> 1894, Made by Washington Jenkins, Civ. Eng.