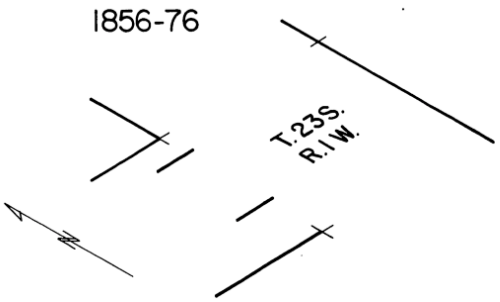
Chapter A

Double Set of Corners in Utah

A5

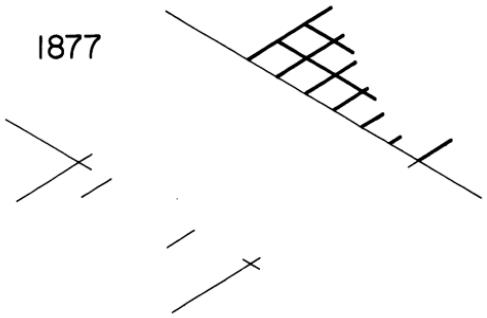
History of Surveys



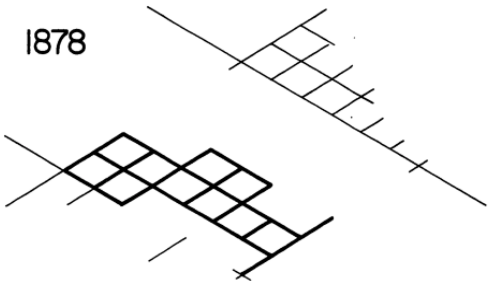
1856 Charles Mogo established the northwest corner of the township and subdivided portions of T. 22 S., R. 1 W and T. 23 S., R. 2 W.

1874 T. C. Bailey surveyed the Salt Lake Meridian. He ran south, setting corners every 40 and 80 chains. No tie to nor connection with the Mogo work was made.

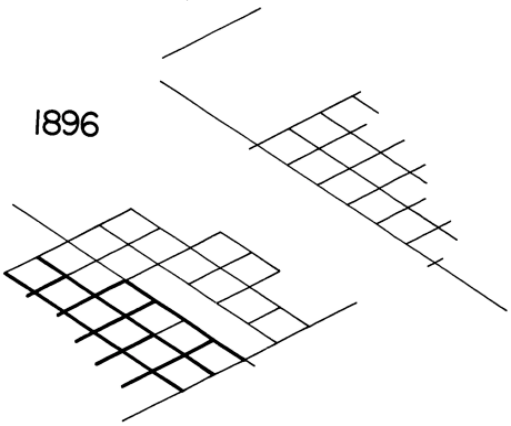
1876 A.. D. Ferron completed the south boundary of T. 23 S., R. 2 W., setting a common corner for Tps. 23 and 24 S., Rs. 1 and 2 W. In T. 23 S., R. 2 W., Ferron ran the line between sections 1 and 12, and between sections 24 and 25, setting common corners on the range line but did not survey the range line itself. Ferron also surveyed some additional lines in T. 23 S., R. 2 W.



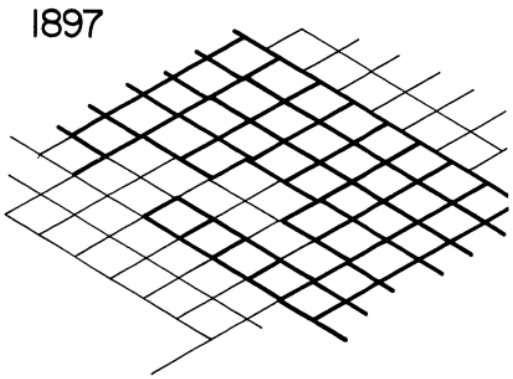
1877 A. D. Ferron subdivided T. 23 S., R. 1 E., using the Bailey corners on the Salt Lake Meridian as his west boundary. Bailey's corners became fixed.



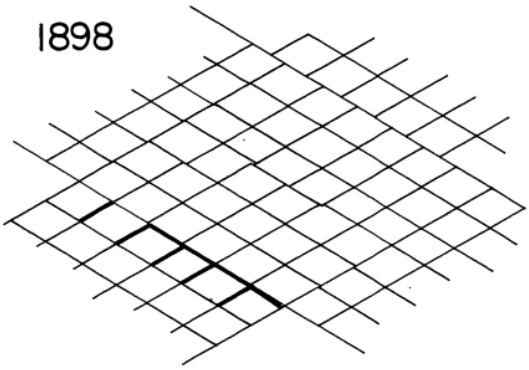
1878 A..D. Ferron surveyed a few more lines in T. 22 S., R. 1 W., adding to the Mogo Work. In T. 23 S., R. 1 W., Ferron surveyed the north 2 miles of the west boundary, the west 2 miles of the north boundary, the west 2 1/2 miles of the south boundary, and a portion of the township, all as shown on the plat approved August 1, 1878. See figure 1



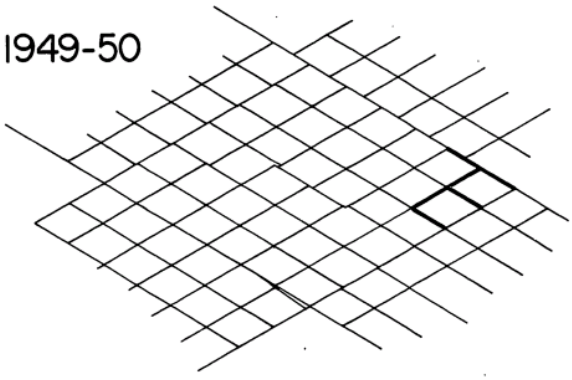
1896 John T. Breckon completed T. 23 S., R. 2 W. Breckon com pleted the range line by running south from Ferron's comer of sections 7, 12, 13 and 18, and south from Ferron's corner of sections 19, 24, .25 and 30, correcting back on a true line between Ferron corners. He reported a common corner of Tps. 23 and 24 S., Rs. 1 and 2 W. The Breckon plat was approved March 27, 1897. See figure 2.



1897 Hubert D. Page and George C. Swan completed the boundaries and subdivisional lines of Tps. 22, 23 and 24 S., R. 1 W. In T. 23 S., R. 1 W., Page and Swan completed the north and the south boundaries, closing against the Salt Lake Meridian. They retraced and resurveyed the Meridian, setting comers for T. 23 S., R. 1 W. They established double corners along the north boundary and the west 3 miles of the south boundary. Page and Swan retraced the south 5 miles of the west boundary returning considerably different results from those returned by Breckon. They retraced the exterior lines of the , Ferron controlling subdivisional lines, as shown on the plats approved May 26, 1899. The Page and Swan plat of T. 23 S., R. 1 W. is shown in figure 3.



1898 Page and Swan reported large errors in Breckon's surveys of the west boundary. Breckon was ordered to correct his work. On April 28, 1898, Breckon reported a corrective survey of the south 4 miles of the west boundary. He reportedly resurveyed the two miles between the Ferron comers of sections 7, 12, 13 and 18, and 19, 24, 25 and 30, random and true, and destroyed his (Breckon's) 1896 corners. He reported running due south from Ferron's corner of sections 19, 24, 25 and 30, intersected the south boundary 1.51 chains west of the Ferron township corner and established a closing township corner for T. 23 S., Rs. 1 and 2 W. He then corrected his subdivisional lines in T. 23 S., R. 2 W. This corrective work is shown on the plat approved March 27, 1897 (figure 2) and partially reflected on the Page and Swan plat, figure 3.



1949-50 R.C. Yundt resurveyed sections 35 and 36. A composite sketch showing the Ferron, Breckon, and Page and Swan records is shown in Figure 4.

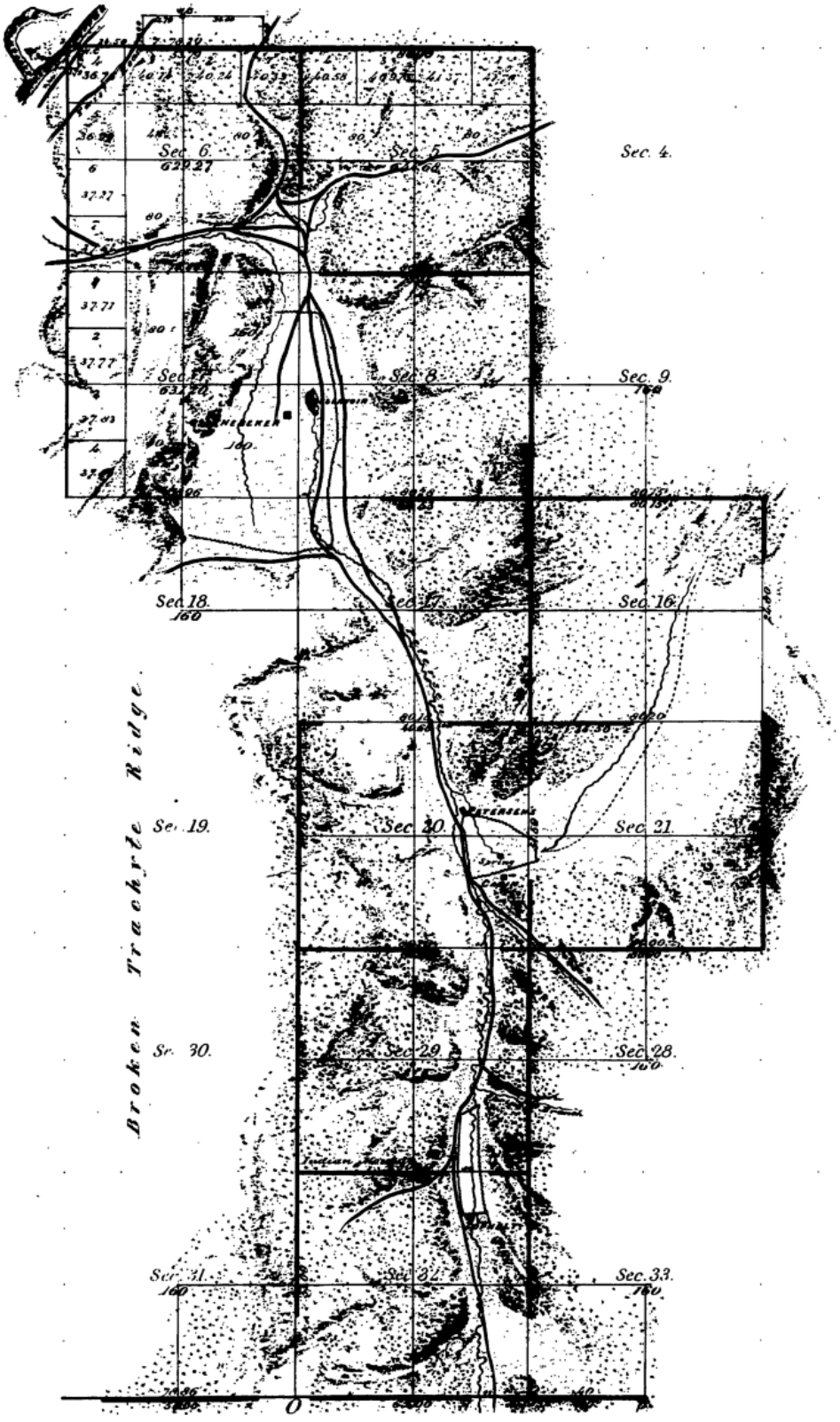


Figure 1 - Portion of Original Plat

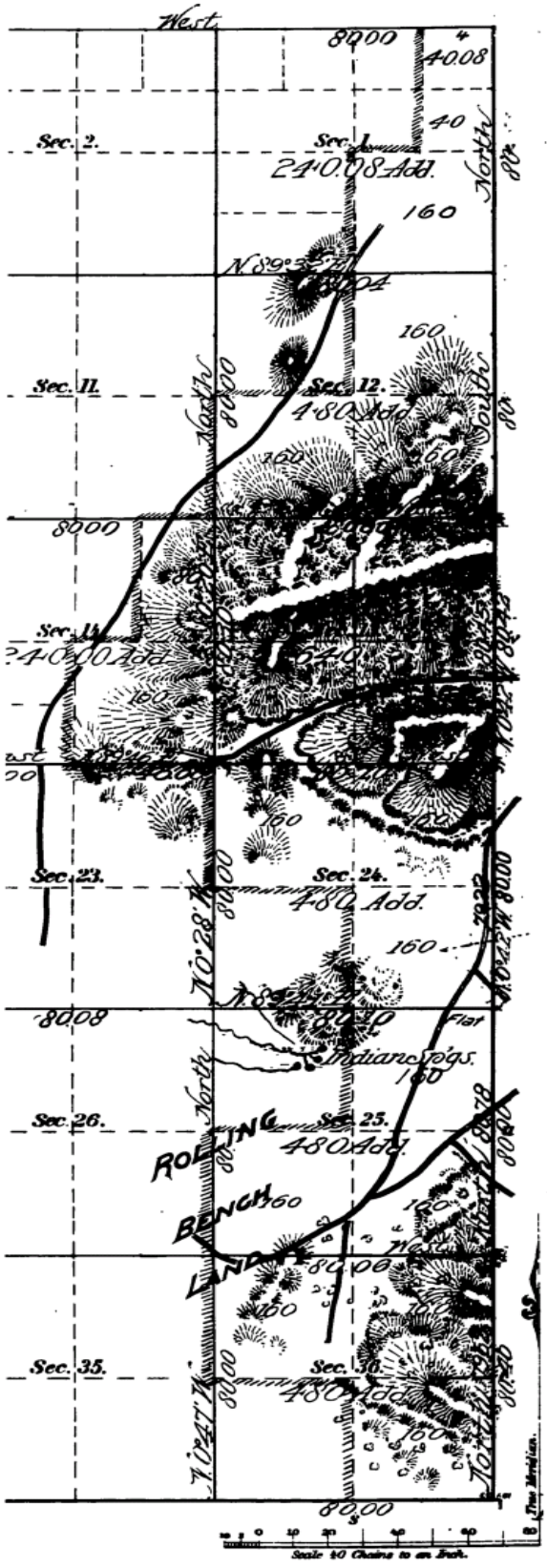


Figure 2 - Portion of Original Plat

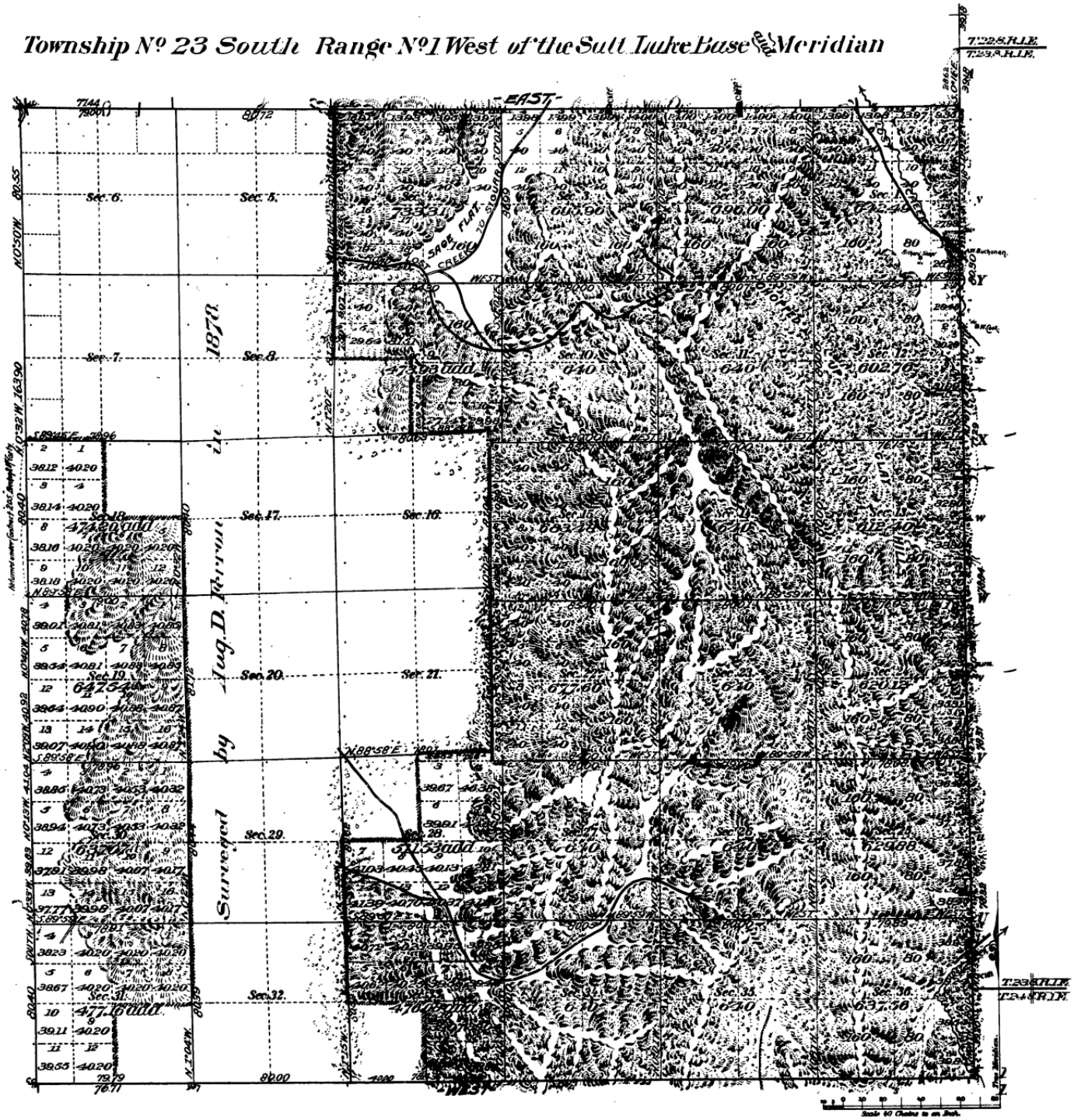


Figure 3 - Portion of Page and Swan Plat

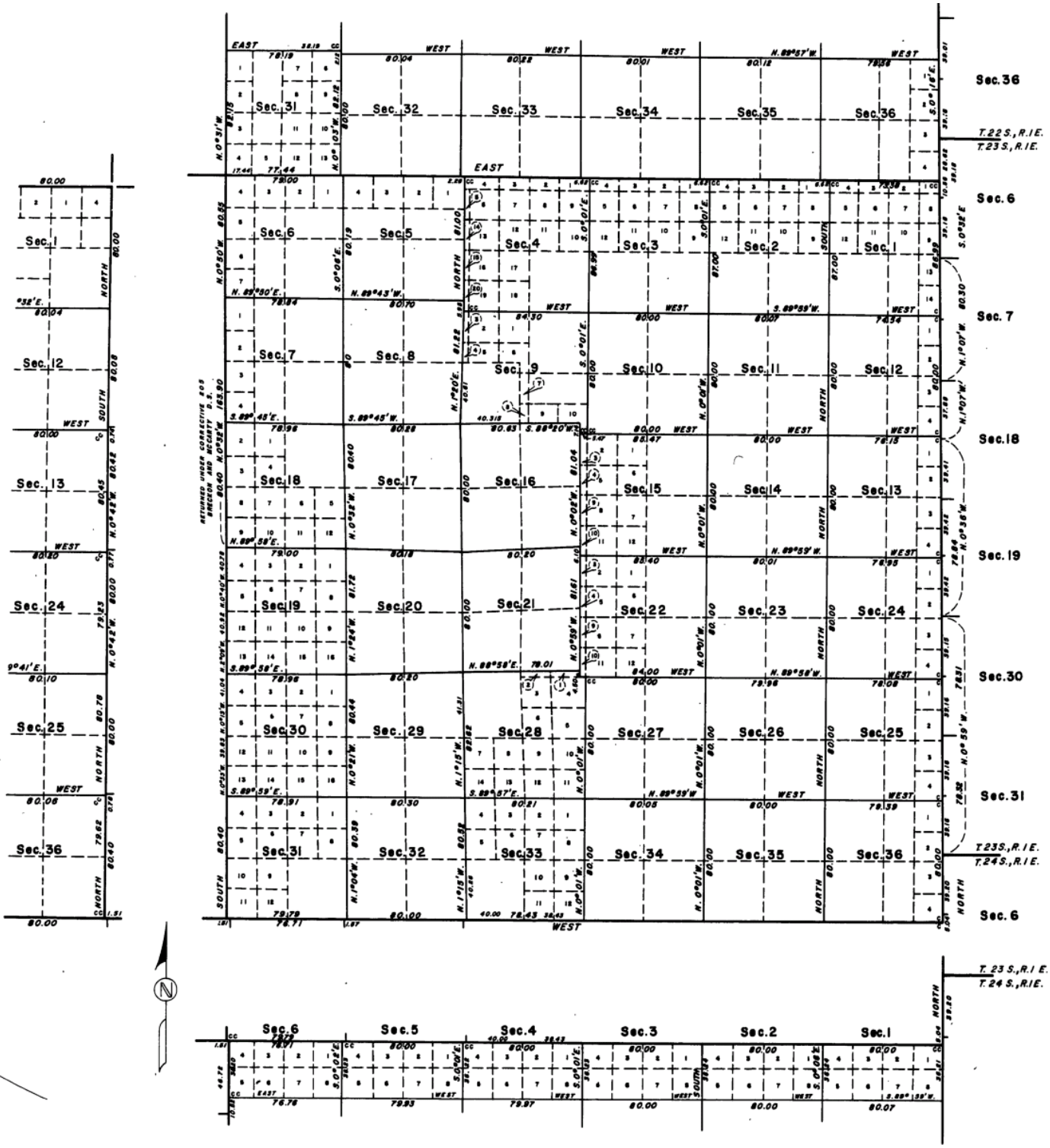


Figure 4a - Composite Sketch of Record

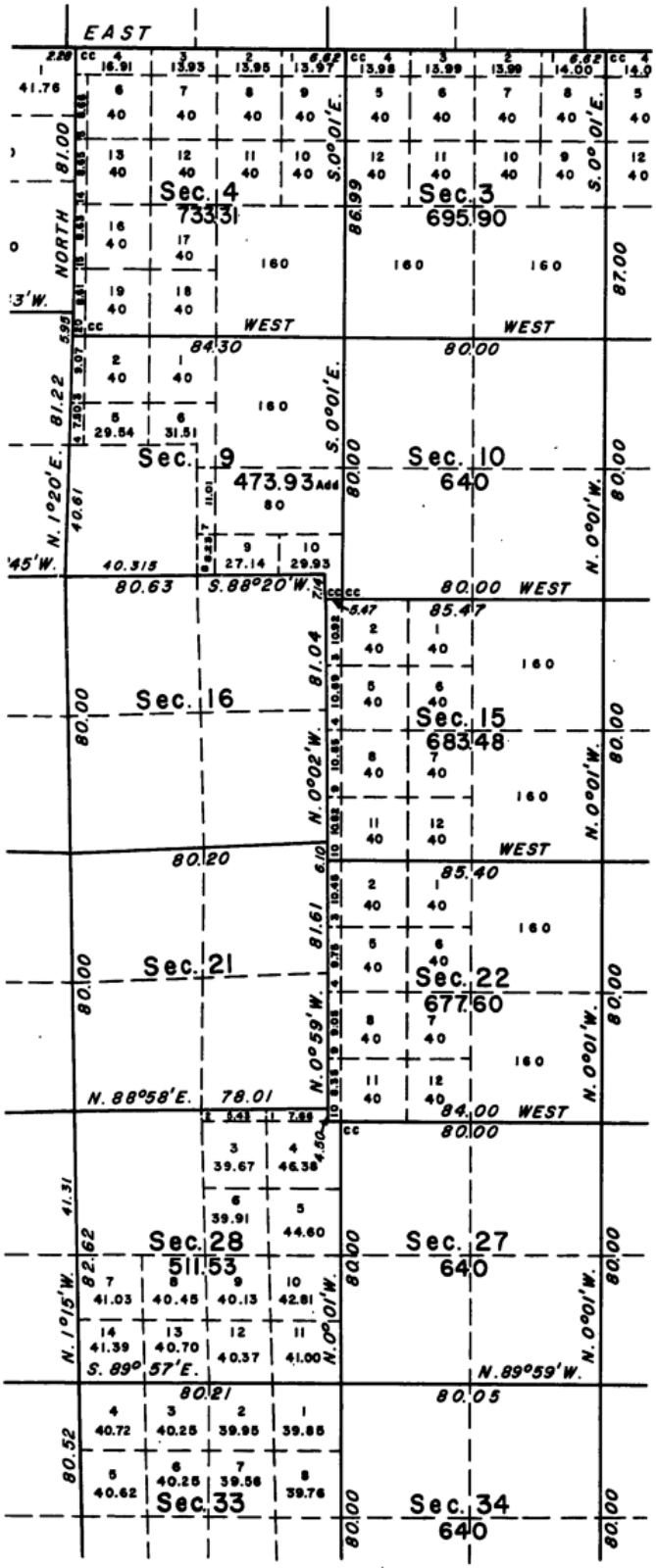


Figure 4b - Composite Sketch of Record

Reasons for Request of this Survey

Tps. 22 and 23 S., Rs. 1 and 2 W., are intermingled Public Land and patented lands. The ,"piecemeal" system of original surveys and the double corners make corner identification difficult. Many of the old corners cannot be found. A resurvey was requested to identify the remaining Public Lands. Figure 5 is the Master Title Plat showing the land status.

Special Instructions

On April 12, 1967, Special Instructions were issued for Group 493, Utah. They provided for the dependent resurveys in Tps. 22 and 23 S., Rs. 1 and 2 W. Field work began on May 16,1967.

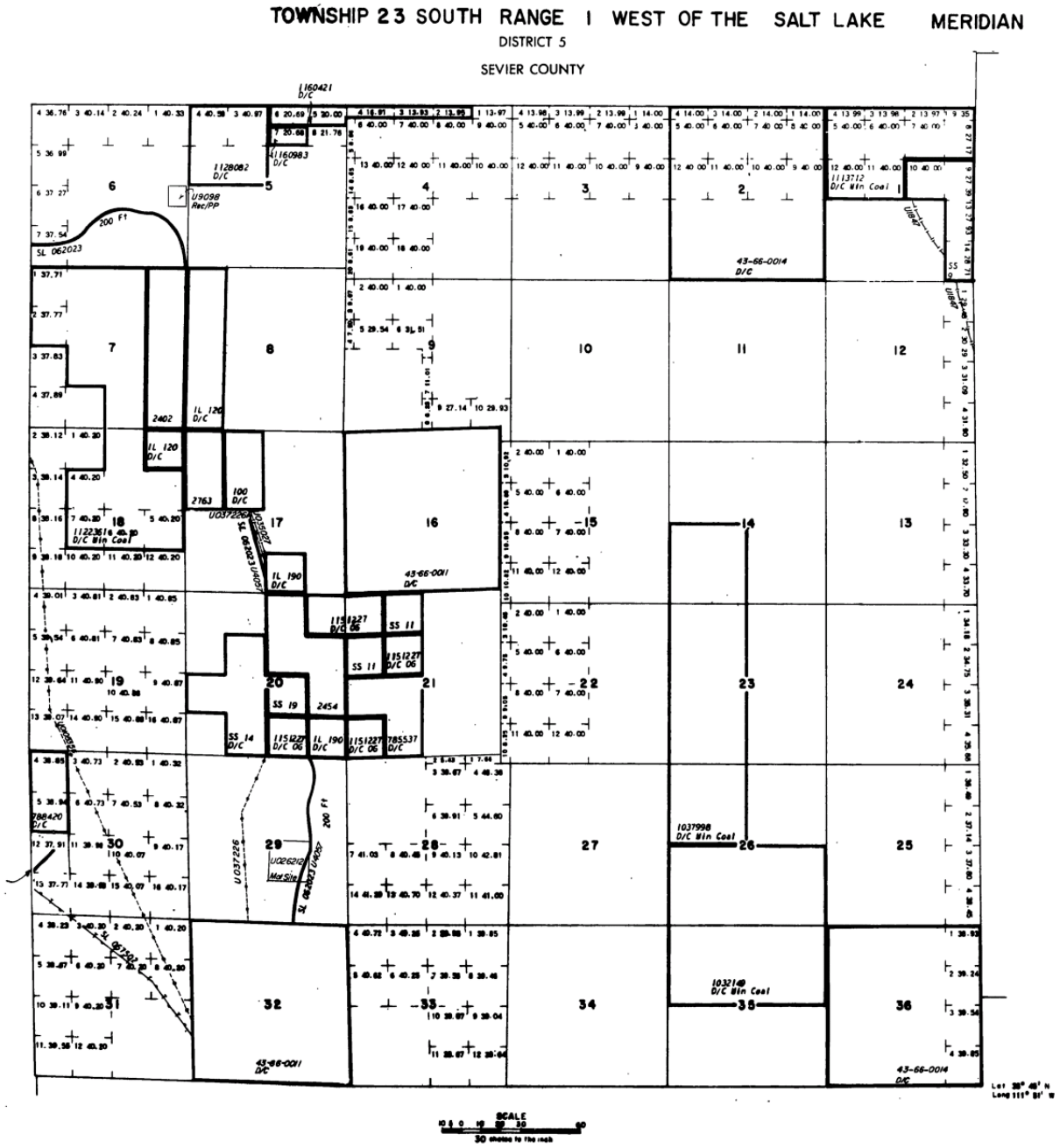


Figure 5 - Master Title Plat

Conditions Found on the Ground

Figure 6 indicates the corners found during the retracements. Sections 35 and 36 had been resurveyed in 1949-50, so only the east half mile between sections 26 and 35 required retracement on this assignment.

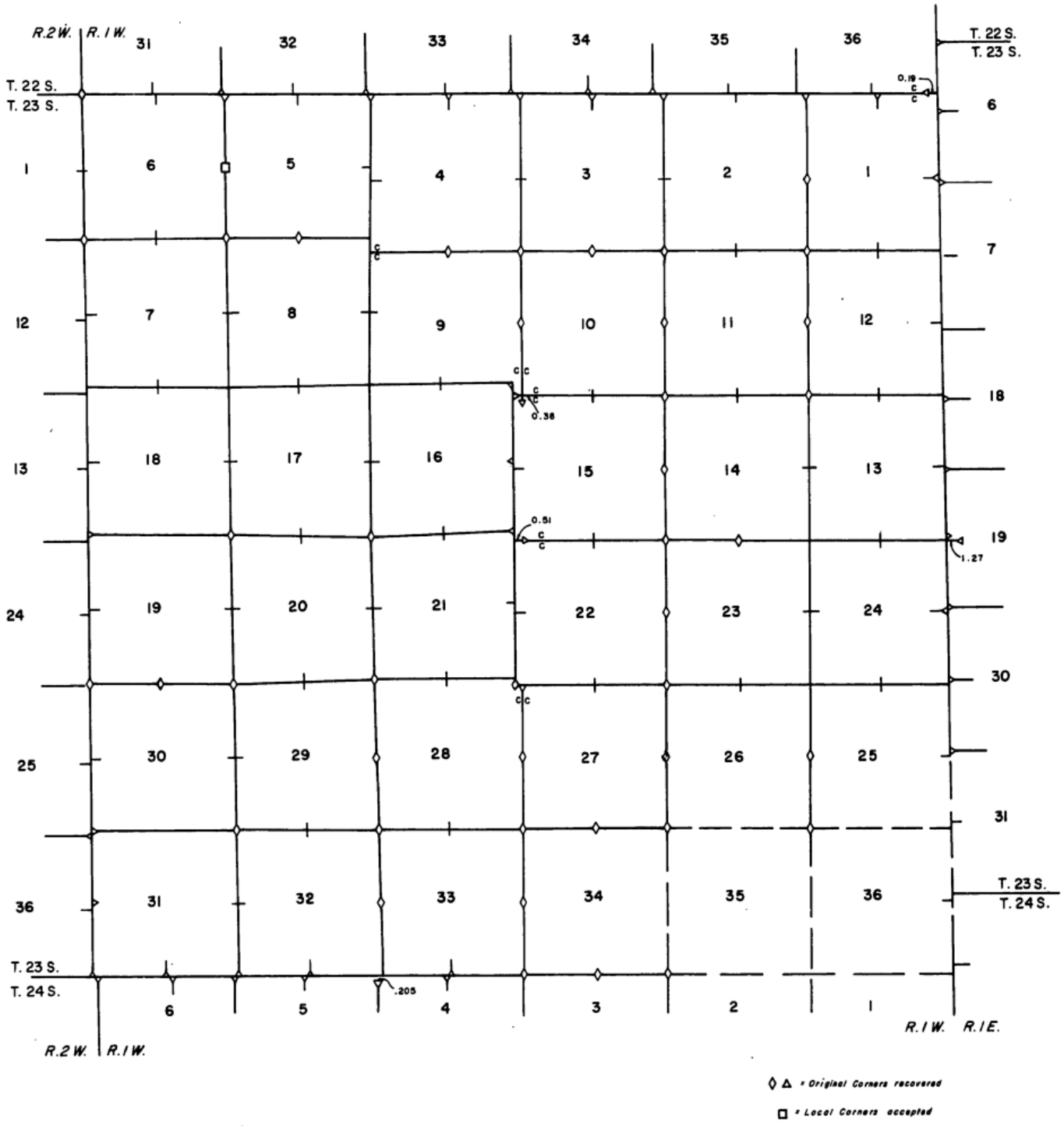


Figure 6 - Corner Recovery Diagram

Preliminary Statement of Problem

The lost corners must be restored by appropriate proportionate methods in a manner which will protect the original plats and patented lands. This discussion of proportionment will be limited to the subdivisional lines in T. 23 S., R. 1 W.

Regulations

This survey illustrates the application of the following sections of the Manual of Surveying Instructions, 1973:

3-74,3-75,3-87, 3-89 to 3-92	Subdivision of sections
5-20 to 5-24	Restoration of lost corners
5-25,5-26,5-28	Double proportionate measurement
5-30 to 5-34 5-38	Single proportionate measurement
5-35	Double set of corners
5-36	Irregular boundaries
5-41, 1 5-42	Closing corners

Final Statement of the Problem

The surveyor must restore the lost 1/4 section corner, section corner and closing section corners by proportionate measurements, controlled by the position of the recovered original corners found on the ground, and in a manner which will protect the rights of patented land owners according to the areas which were returned on the original plats.

Solution

This discussion is limited to the restoration of the lost corners of sections 4, 5, 8, 9, 10, 15, 21 and 22, T. 23 S., R. 1 W.

The east boundary of section 21 was restored by single proportionate measurement between the recovered southwest corner of section 22 and corner of sections 16 and 21.

The line between sections 15 and 22 was extended through the "offline" closing corner of sections 15 and 22 to an intersection with the restored east boundary of section 21. The 1/4 corner of sections 15 and 22 was set by single proportionate measurement, based on the plat and field notes, between the original closing corner and the corner of sections 14, 15, 22 and 23.

The west 1/4 corner of section 15 was established at midpoint between the "new" closing corner of sections 15 and 22 and the recovered closing corner of sections 9 and 15, the latter being on the true east boundary of section 16.

The west 1/4 corner of section 22 was established at midpoint between the southwest corner of section 22 and the "new" closing corner of sections 15 and 22.

The line between sections 9 and 10 was terminated at the true intersection with the north boundary of section 15, and a tie made to the "offline" closing corner. The original closing corner determined the direction of the line between sections 9 and 10, but not the terminus of that line. The original closing corner would also be used to determine the position of a south 1/16 corner of sections 9 and 10.

As shown by the areas on the original plat, the 1/4 corner of sections 10 and 15 would not be common because of the resurvey distances. The south 1/4 corner of section 10 was placed properly at midpoint between the "new" closing corner of sections 9 and 10 and the recovered corner of sections 10, 11, 14 and 15. The north 1/4 corner of section 15 would be proportioned between the northeast and northwest corners of the section. Both sections 10 and 15 are all vacant public domain so the 1/4 corner of section 10 was made common with section 15 and avoided a "double" corner.

The corner of sections 8, 9, 16 and 17 was double proportioned as in a normal situation, using the restored corner of sections 7 and 18 on the west boundary for control in that direction.

The latitudinal position of the lost corner of sections 5 and 8 was determined by single proportionate measurement. The longitudinal position was determined by proportionate measurement between the 1/4 corner of sections 4 and 9 and the 1/4 corner of sections 5 and 8, based on Ferron's record, Page and Swan's survey and retracement differences in longitude. In other words, a "double" proportionate measurement of the corner was made, rather than a "three point" control. (Three point control would be the proper method to use in spite of the effect on the bearing of the east boundary of section 8. The west half mile between sections 4 and 9 would then be nearly 3 chains shorter than the record.]

The closing corner of sections 4 and 9 was single proportioned, as was the 1/4 corner of sections 8 and 9 after the corner of sections 5 and 8 was restored.

The east 1/4 corner of section 5 was set by single proportionate measurement between the northeast and southeast corners of section 5, based on the plat and field notes.

The west 1/4 corner of section 4 was established at single proportionate position between the northwest and southwest corners of section 4, based on the areas returned on the original plat.

The plat was accepted April 19, 1973, and is shown in figure 7.

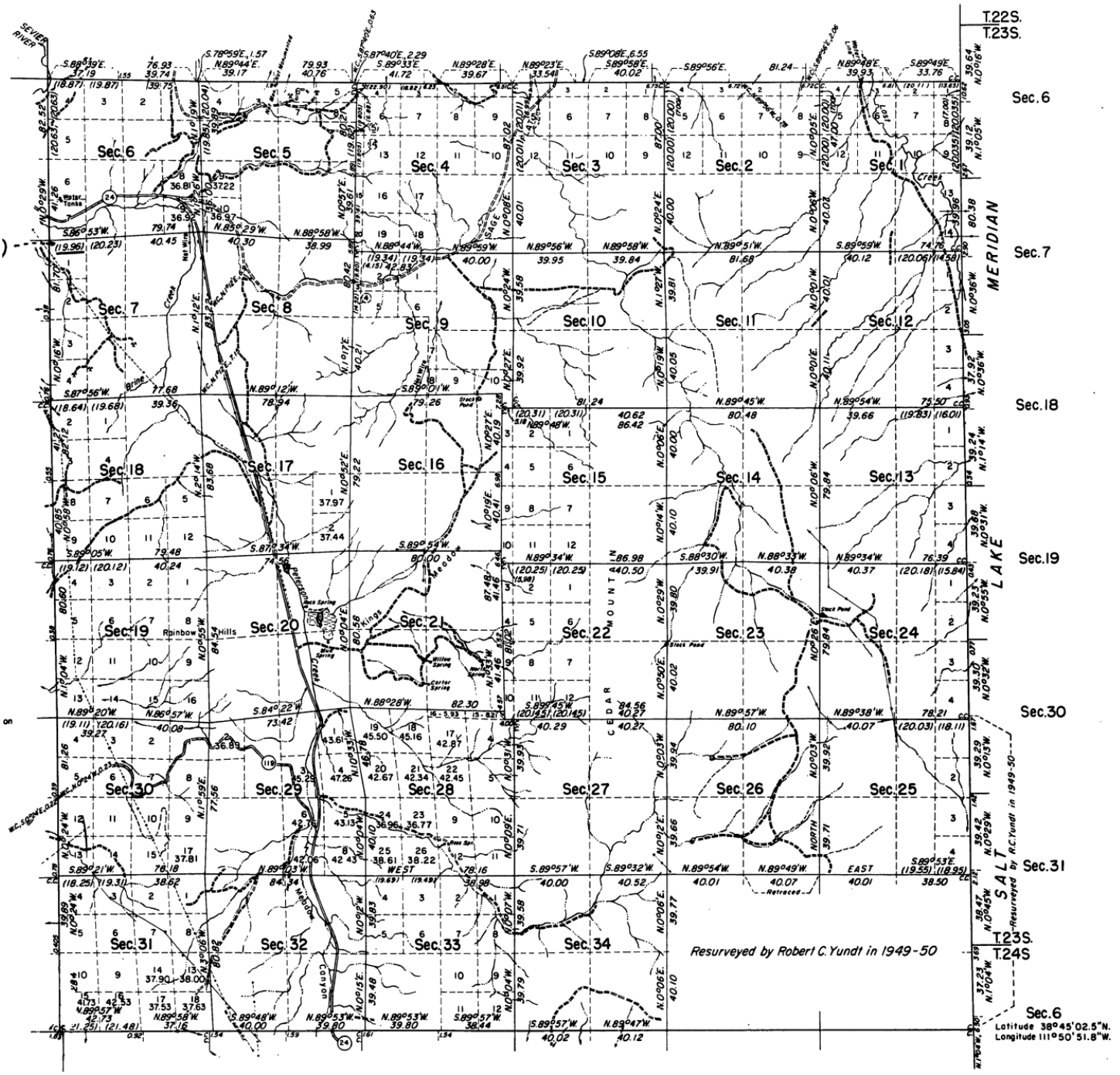


Figure 7 - Portion of Accepted Plat, T. 23 S., R. 1 W.

Supplementary Topic

Parenthetical Distances

Although not shown on the plat nor required for the purpose of this survey, the parenthetical distances for section 9 which correspond to the original plat are of interest. These parenthetical distances would be necessary for and the basis of subdivision of section 9 if required. Figure 8 shows the record of section 9 as shown on the Page and Swan plat as well as calculated parenthetical distances.

A theoretical west 1/4 corner and south 1/16 corner on the west boundary of the section would be placed at 40 and 60 chains south in latitude, proportionately from the northwest corner of the section. These would be the basis of a "normal" subdivision of the section.

The southwest 1/4 of section 9 would be surveyed by running north, parallel to the west boundary and east, parallel to the south boundary to an intersection to establish the northeast corner of the southwest 1/4.

The "normal" subdivision of section lines would be terminated on the boundaries of the southwest 1/4.

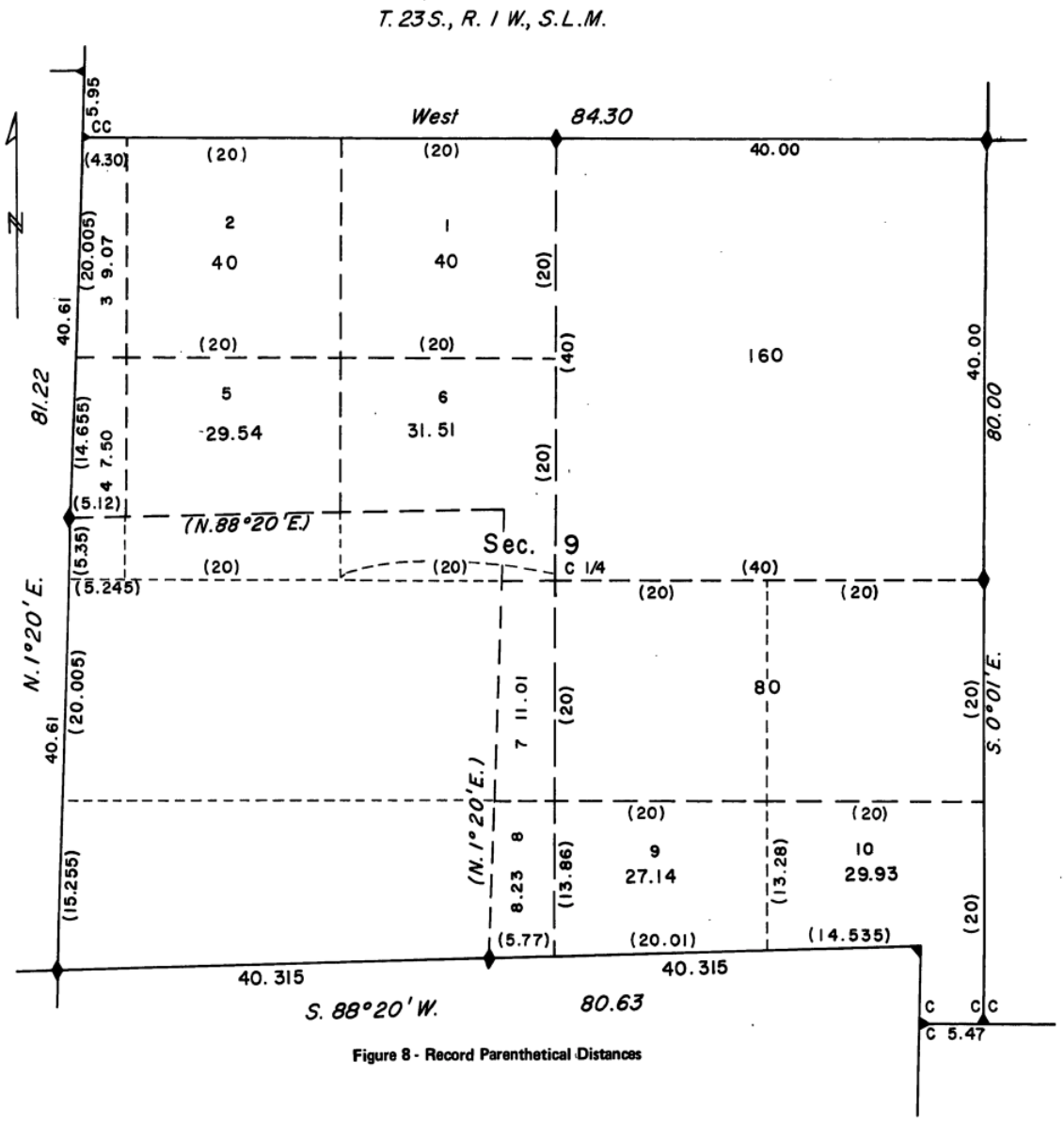


Figure 8 - Record Parenthetical Distances