

XXVIII. THE NORMAN SPECIAL TOPOGRAPHIC SHEET

Robert Muldrow, United States Geological Survey.

1. **Object.** The object of this survey was the making of an adequate base map for students in Geology, Engineering, Military Science, and other purposes. An attempt was made in the fall of 1923 to get the U. S. Geological Survey to do this work for the University. At that time the attempt failed, because of the lack of State money for cooperative surveys. The matter was again taken up early in January, 1925, and at that time agreements were reached whereby the U. S. Geological Survey agreed to do the work, cooperating with the Department of Geology, the Oklahoma Geological Survey, and the U. S. Reserve Officers Training Corps at Norman. Work was begun on the survey the middle of June, 1925, and field work completed Oct. 15th, 1925. Some 15 geology students from Oklahoma University assisted the topographical engineers and the U. S. Reserve Officers Training Corps furnished transportation.

2. **Area.** An area of 53 square miles with Norman near the center is covered by this map.

3. **Scale.** The scale adopted was 1-24,000, or 2,000 feet to the inch. The contour interval agreed upon was 5 and 10 feet, five feet for the flat portions on the west and ten feet for the more broken country on the east side of the quadrangle.

4. **Horizontal Control.** The horizontal control for this area was brought in from the U. S. Coast and Geodetic Survey triangulation to the west of Norman. Numerous points were located in and about Norman and all over the area surveyed, and to these locations the land survey system was tied.

5. **Levels and Bench Marks.** Very careful primary levels were run in a circuit of some 30 miles around the city of Norman, reaching as far south as Noble. Permanent bench marks were established every two miles of level line run. These bench marks were re-inforced concrete, 4 feet long and 12 inches in diameter, set 3 feet in the ground, bearing the regular standard U. S. Geological Survey tablets in the top of the post. The bench marks have not been stamped with the figures of elevation. These can be readily obtained from the Geological Survey at Washington upon request.

6. **Methods.** After the horizontal and vertical control were

established, each section was worked out in very great detail by the stadia method.

7. Assistants. The Geology students who assisted in this work during the season were as follows:

H. J. Morgan, F. R. Kittridge, A. B. Gross, C. Chatman, P. R. Hanson, G. N. Smith, L. O. Seaman, E. Dawson, C. L. Young, E. B. Whitwell, E. Ustynik, K. B. Absher, V. E. Autry, Tom Williamson. R. E. Daugherty, U. S. Army Driver.