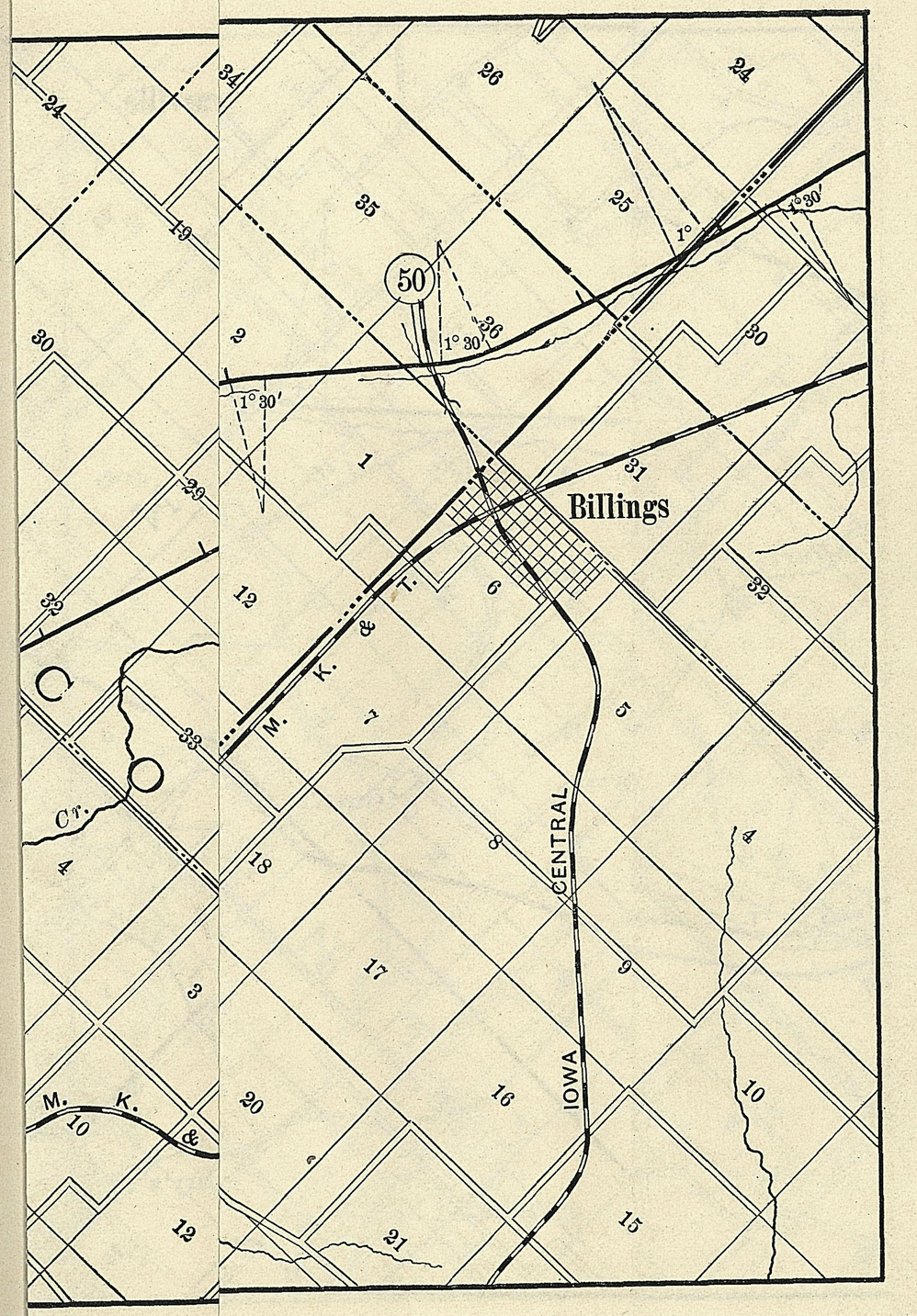
The first thing the following day, the line was inked in, in red, station numbers were marked at all angle points, the topography taken the previous day was platted and inked in immediately in black. Black was found preferable for the contours, as it stood the erasing of the projected lines better than colors. Valleys were indicated by a light blue line drawn through the lowest points, thus making the topography stand out and easier to read. It was found necessary at times to have one topographer stay in half a day and assist the draftsman by platting the topography, in order to keep all the parts of the work co-ordinated.

With the large party used, more than 4 miles per day of preliminary were averaged, and it was absolutely necessary to keep the topography close up, in order that the projected location should not get behind. As a rule, as the map was being used in the evening and the early part of the day, the Locating Engineer endeavored to get back to camp about 4 P. M. and get the projected location up to date before supper. Separate sheets, as advocated by Mr. Wellington in his "Economic Theory," may have some advantage in this respect, but the writer prefers the map on a roll of 36-in. paper. There are few places in difficult country where it is not necessary to run more than one line, and it has always seemed to the writer to detract from a general, broad, comprehensive study of the lines, as a whole, to have them scattered around on separate small sheets of paper.

Necessarily, also, by the separate-sheet method, the lines and topography must start right from the edge on one side of the sheet, where it is very likely to be torn; on the 36-in. rolls used on this survey, no topography was allowed within 6 in. of the edge of the paper, except possibly at a point where it just came near the edge and immediately receded from it.

It was absolutely required that the projected location should fall within the limits of the topography, that is, within 300 ft. of the preliminary line, and if, for any considerable distance, it was more than 200 ft. from the preliminary line, it was often deemed advisable to cover this with another line.

In making the projected location, a sheet of tracing cloth, on which was drawn in ink to the scale of the map the curves proposed to be used, with tangents at the ends, was found very useful in fitting the alignment; 100-ft. stations were marked on these curves on the tracing