CHAPTER XVIII.

WORKING-DRAWINGS.

The first points to be determined before commencing a working-drawing are the scale and the size of the paper. The least scale which it is convenient to use is one inch to the foot, and the greatest scale for a whole drawing should seldom exceed an inch and a half to the foot. If a smaller scale than one inch be used, difficulty will be experienced in writing the rivet spacing between the rivet holes. The width of the paper should be from three and a half to four and a half, or even five feet: and, as for the length, it is better to use roll-paper, and not to cut it until the limits of the drawing be determined; for it is a great convenience to be able to make all the working-drawings for a bridge upon a single sheet.

The following is a draughtsman’s equipment for making working-drawings in a methodical and expeditious manner: a table from four to five feet wide, from six to eight feet long, and about three feet high; a pair of steps each three or four inches rise, and three feet long; a bevelled steel straight-edge, at least three feet long; a beam compass with tangent screw attachment; a couple of small triangles (rubber ones are the best); some four-H and six-H pencils; a little tracing-paper; a finely divided duodecimal boxwood scale (the subdivisions being quarters, eighths, and sixteenths); a good box of instruments, including a protractor and a pair of hairspring dividers; and the usual outfit of rubbers, tiles, pens, etc., that one finds in draughtsmen’s offices. T-squares, large triangles, and parallel rulers should never be used in making a working-drawing. The first can never be depended upon, because of the impossibility of having both board and T-square always perfectly true; no