views of the lower chord pins; giving their number, diameter, lengths between shoulders, diameters and lengths of reduced ends, and the total lengths, also the sizes of the nuts.

At the right-hand end of the plan, show the lower lateral struts, and complete drawings for the floor system, including beams, beam hangers, beam-hanger plates, bolts, joists, etc. Generally the floor beams will be all alike: so it will be sufficient to represent half a beam. It may even do to show only half of a lateral strut, although there are always several different lengths of them in a bridge, provided that there be written sufficient directions to enable the carpenters to frame all the struts without possibility of error. In writing dimensions, etc., upon a working-drawing, it is immaterial from which direction the writing be read; that is, it may be read sidewise, upside down, or in any direction most convenient to the draughtsman. In making tracings, this matter can be rectified if it be thought advisable. Full directions for the manufacturer should be written on the drawing. On the rest of the plan, show the upper lateral struts with their details; all the lateral rods with their turn buckles or sleeve nuts, and their eyes in two views; the end lower lateral strut with its details, and its connection to the pedestal; the whole of the portal bracing with its connections; the ornamental work; and the name plates.

Finally, take the list of members, and go carefully over the drawing with it; seeing not only that each piece is represented, but that there are sufficient measurements given to have it manufactured.

The following additional directions and hints may be found useful. Refer each group of rivets to some local line, which is itself referred to the end of the piece, or some other prominent part. Show a section of each member, and write the dimensions of all channels, angles, I-beams, etc., near the section. Write along each piece its extreme length or lengths, its length from centre to centre of eyes, and of what it is composed. The ends of the two pieces of an adjustable rod should be separated by at least three or four inches in the turn buckle or sleeve nut. Mark what rivets are countersunk, and at which end. If the scale of the drawing be large enough, the countersinking can