

Then, according to the method given in Trautwine's "Pocket-Book," $p = \frac{8dc}{sn}$, where d and s may be measured in feet, and c and p in inches. The panel length of the top chord will then be $l' = l + p$, where l is the panel length of the bottom chord.

This is not a certain proof of the accuracy of the work. Two consecutive post centre lines might be equally inclined from their correct positions, and on the same side, though this would be shown in the next panel. A certain check must be obtained by measuring the lengths of the diagonals, which should be equal to each other, and agree with that found by the formula

$$D = \sqrt{d^2 + \left(l + \frac{p}{2}\right)^2},$$

where D is the length required.

For double-intersection bridges, the length of the long diagonals can be found by the method given in Appendix III. The length of the diagonal as manufactured should be one sixty-fourth of an inch less than that calculated, so as to allow for the play of the pins in the eyes. As a slightly greater allowance for play is permissible, it is better to take the next smallest sixty-fourth, if, after making the reduction just indicated, the length should not come out on an exact sixty-fourth. Because of the play in the pin holes of the bottom chord bars, the panel length of the manufactured top chord should exceed the calculated length by about a thirty-second of an inch.

Next fill out the elevation of the chords, posts, diagonals, and batter brace, without showing details. Alongside of each tension member show the heads with their dimensions, and on the shortened distance mark the size of the bars, the number of them, and the length from centre to centre, as shown on Plate VI.

At the right-hand end of the drawing, or on a separate sheet, whichever be more convenient, draw out the heads full size, placing one on the other, if this can be done without confusion. Sometimes as many as six heads can be represented about one centre, provided that both pins and heads diminish together.

For hammered heads the method of construction is very sim-