ing to the hardness of the ground, the weight upon the sill, and the height of the falsework. It is not necessary that the timbers be square. For ground not especially hard, wide timbers laid on their flats are preferable, because they distribute the pressure better.

If there be but one tier per bent, two posts will be enough, when the width of roadway does not exceed sixteen feet. These posts should batter about one inch to the foot, and should be covered by a cap about 6" by 6" or 8" by 8", long enough to project two feet beyond each truss. The upper ends of the posts should lie directly under the trusses, and the caps should be drift-bolted thereto. If the roadway exceed sixteen feet, there should be an intermediate vertical post. The bent should be braced by diagonal flat timbers, say from 2" by 6" to 3" by 8", according to their length, running in opposite directions, one on each side of the bent, and bolted or spiked to the posts and cap.

If there be two tiers in a bent, the inclined posts should batter two inches to the foot (or three inches if there be danger of high wind), and there should be a vertical post under each truss. Each tier should be braced with diagonal timbers, as before. The greater the danger of high wind, the more effectively should each bent be braced. Alternate consecutive bents should also be braced diagonally on their outer faces, and all consecutive bents should be connected by longitudinal horizontal planks well spiked to the caps. These planks will be useful, in fact often necessary, for the workmen in passing from bent to bent. If there be more than two tiers per bent, the batter of the inclined posts should be three inches to the foot. A good height for each tier is sixteen feet.

Where the bottom is soft, or where the water is deep and rapid, piles will be required to rest the bents upon. There should be from two to five piles per bent, according to the width of the latter; a pile being placed below each vertical and inclined post. These piles should be braced in the direction of the stream by flat timbers bolted thereto. Any bracing that may be given them transversely to the stream should be at such a distance above high-water level as to cause no obstruc-
tion to boats, trees, ice, or other floating objects.