

stringer, and through the centre of *c* and *d*. There are also two $1\frac{1}{4}$ inch iron pins, 7 inches long, passing through *d* on the upper side of *c*, $4\frac{1}{2}$ inches from centre to centre, with two $\frac{1}{4}$ inch plates 2×7 inches, for the ends of the pin to bear on. These bearing plates should have nail holes at the ends. The pieces in all cases, should extend beyond the bolt or pin holes, not less than five times the diameter of said holes.

The diagonal *e*, is halved and locked with its mate at the upper end, and fitting an x formed boxing 1 inch deep, inside of the stringer pieces, is secured by a $1\frac{1}{4}$ inch bolt through the whole.

The piece *d* is halved and locked with its mate at the lower end, with a piece of 2 inch plank, $2\frac{1}{2}$ feet long, locked, bolted and spiked on to each, as in the corresponding case in the preceding plan. Two $1\frac{1}{2}$ inch bolts are used at this point, each in the centre of the stringer.

The horizontal bracing is the same in this as in the preceding plan, the braces being a little larger towards the ends. 3×6 braces will be sufficient, or 3×6 at the ends and $2\frac{1}{2} \times 6$ in the middle. They may be halved together at the crossing point, and spiked to the under side of the rail timbers, or one may be placed sufficiently below the other to pass without cutting either.

The bracing and tying to preserve the vertical position of the trusses, is the same as in the 40 ft. plan. In this, as well as that, the braces may be on the outside of the truss, the cross bearers extending some three feet from the centre of the truss, to support the brace and tie.—These braces are not shewn in the figure.

It is advisable in all these plans where the erect position of the truss depends on its connections with the cross beams, that the latter should be trussed, in all cases where they would not thereby occupy too much space vertically, as the spring of the beam communicates motion to the truss. This is, perhaps, less detrimental in a rail road,