
Truss Bracing Tips

Bracing roof trusses to the building frame rather than the ground saves time and keeps the site uncluttered



By starting truss installation several feet in from one end of the building and bracing back to the end wall, the author avoids using long bracing from the roof to the ground.

Using roof trusses lets you close in a building quickly and gives you flexibility in placing interior partitions. But except for some data published by the Truss Plate Institute (Madison, Wis.; 608/833-5900), there is little written information on how to install and brace trusses. The few books that do discuss the issue typically show the first truss located directly over the end wall and braced diagonally to stakes driven into the ground.

I can give three reasons why you should, or in one case must, support your trusses another way. First, depending on

the building's height and the slope of the site, the length of a diagonal brace from the peak of a truss to the ground can measure more than 40 feet — too long a span for strong, rigid bracing. Second, in the case of a hip roof, the girder truss usually sits at least 12 feet inside the end wall, where it's impossible to brace it diagonally to the ground. Finally, braces running from the roof to the ground clutter the site, slowing the work and creating safety hazards.

A Different Approach

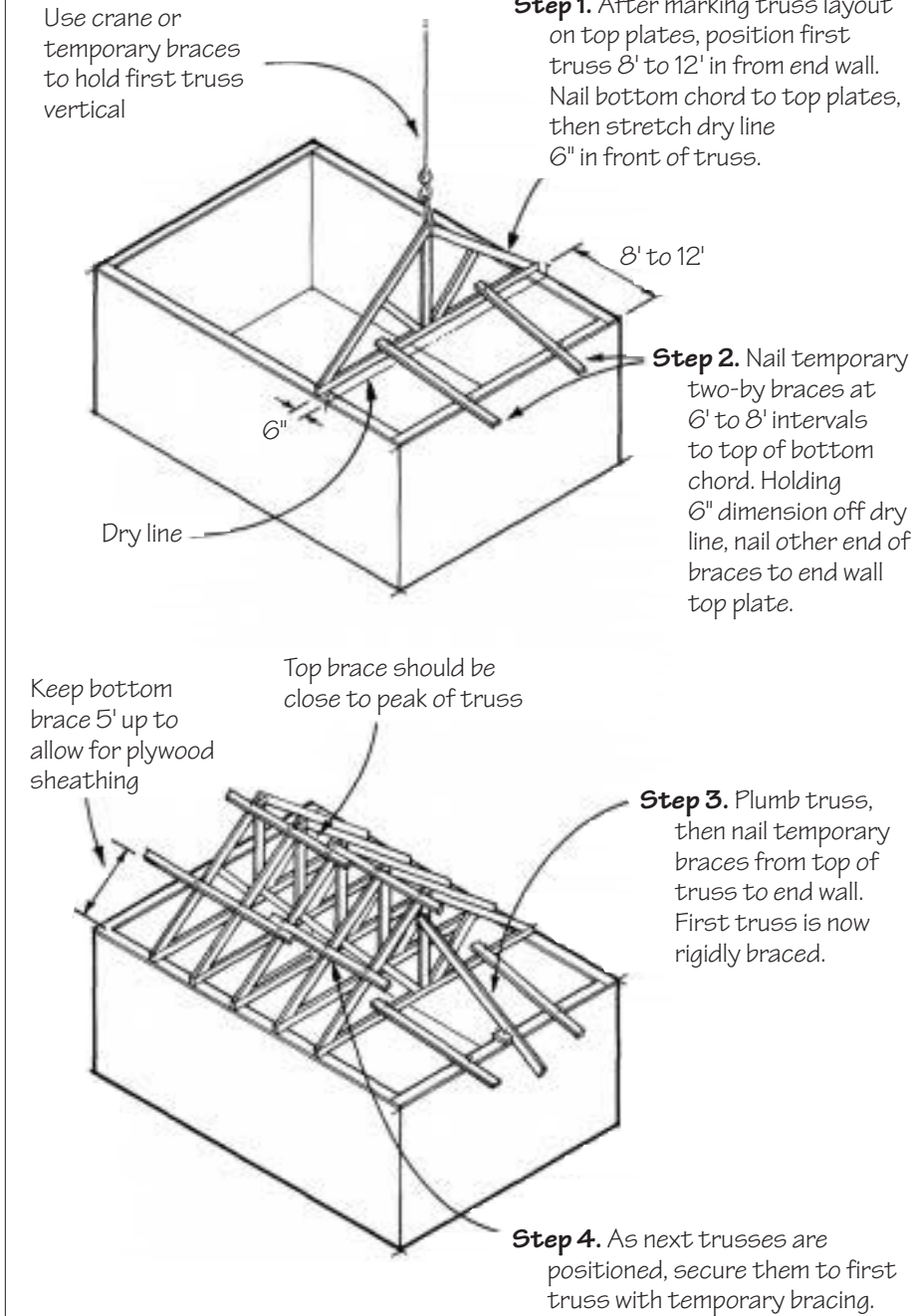
To avoid these problems, I use a different technique for installing roof trusses. First, I straighten and brace the exterior walls as usual. Then I beef up the bracing of one of the end walls — the end where I plan to start truss installation. But instead of starting directly above the end wall, I position the first truss 8 to 12 feet in, then brace it back to that wall. Here's how it works.

Before plunging into the stack of trusses, I mark the truss spacings (usually 2 feet on-center) on the top plates of the bearing walls. While I mark the layout, I have another carpenter prepare plenty of two-by-lateral braces by marking off the truss centers and starting a duplex nail at each mark.

Next, either with a crane or with lots of muscle, we raise the first truss and set it in position on the first layout mark farther from the end wall than the height of the truss. For example, for 7-foot-high trusses, we would position the first truss at the fifth layout mark (8 feet in for trusses 2 feet on-center).

by Paul De Baggis

A Proven Truss Technique



This ensures that all the braces from the top chord of the truss will be at less than a 45-degree angle, making them much stronger than braces at steeper angles.

Then, with the help of the crane or with braces from the end wall or the deck below, we hold the truss plumb while we position it exactly on the layout marks and toenail it to the plates.

At this point we pull a dry line from the front to the back plate and 6 inches in front of the truss. We

position braces at 6- to 8-foot intervals from the top of the bottom chord to the top of the end wall. Depending on the distance between the end wall and the first truss, I've used almost everything from 2x4s to staging planks. *Never* use 1-inch stock for bracing.

We first spike each brace into the top of the bottom chord. Then, as one worker measures, his or her partner adjusts each brace and spikes it to the

end wall when the truss's bottom chord is exactly 6 inches from the line.

Next, with either the crane or workers on the deck or end wall still steadying the truss, I climb an extension ladder to the peak and plumb the truss, using a 6-foot level and straightedge or a plumb bob. (For lower-pitch trusses, staging or a tall step or trestle ladder also works for getting to the peak.) When the truss is plumb, I nail a brace from the peak to the top of the end wall. Then I work down the top chord at 6- to 8-foot intervals, straightening and plumbing it, then bracing it back to the end wall.

The Rest Is Easy

With the first truss in place, straight and plumb, the rest of the trusses go more quickly. We nail the second truss in place; then, using the premarked lateral bracing, we secure it to the first truss.

For a standard house truss, say 24 to 36 feet long, we install at least one row of lateral bracing along the peak, one along the attic walkway, and one along the midpoint of each top chord. Larger trusses require more.

To be sure the trusses will withstand a windstorm, we connect all the trusses to one another with diagonal web bracing. We begin installing this as soon as the fourth truss is up.

Once we've set a dozen or so trusses, another crew can start the roof sheathing to help stiffen them. We keep the lowest lateral brace at least 5 feet up from the bottom edge of the truss so we don't have to remove it until the first row of plywood is nailed off. Meanwhile, the first crew continues across the building, setting trusses and installing the diagonal and lateral braces. When the entire roof assembly is anchored together, we nail two continuous 2x6 braces from the ridge to the floor in the form of an "X" or an "A."

To finish the roof, we remove the end wall braces to the first truss and work back to the end wall. Finally, we install the permanent bracing and metal tie-downs per the engineered bracing plan from the truss manufacturer. ■

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