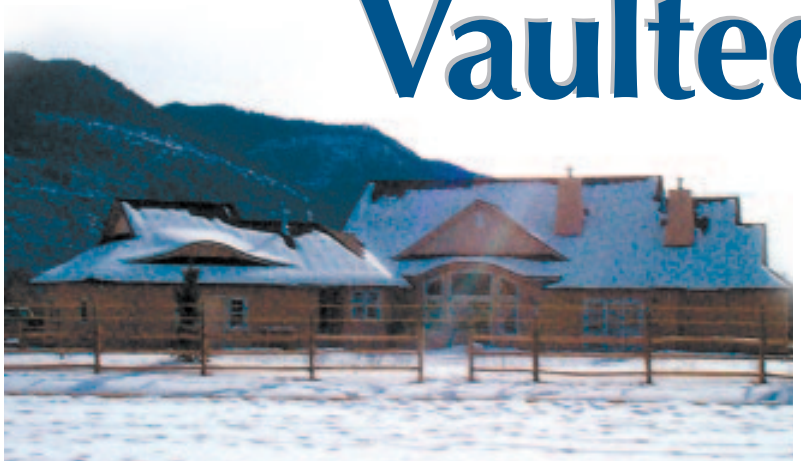
A SIMPLE Vaulted Ceiling



by Emil Wanatka

Attaching scribed OSB gussets to scissors trusses converts an angled cathedral ceiling to a graceful curve

The idea for this curved ceiling originated with the roof. The large size of the house and the client's desire for a fairly steep pitch led to a very prominent roof structure. Thinking back to Thomas Buckborough's article on framing an eyebrow dormer in the August 2001 issue of *JLC*, I decided that adding an eyebrow dormer to each side of an extended wing would bring the roof into scale and enhance the quaint, cottage-like feel the owner wanted. For continuity, we also incorporated an eyebrow into the fascia of the roof on both the front and back of the house.

But after seeing the revised drawings of the eyebrow above the patio doors to the great room, I thought how dramatic it would be if the shape could be carried through to the ceiling of the great room. The owner liked the idea. I assured her that building it would be no problem — then went into a huddle with the truss designer and framing contractor to figure out how to do it.

Figure 1. A site-built laminated plywood header defines the eyebrow profile above the patio doors. Short rafters extend from the eyebrow to the peaked roof beyond, which is framed with scissors trusses.

A Laminated Header

As described in the Buckborough article, we site-fabricated the curved header above the opening from plywood. This involved gluing and screwing together eight layers of 3/4-inch plywood to span the 20-foot opening. The laminated header is supported by a post at either side of the patio doors and carries only a short section of roof, so it doesn't have a lot to do structurally (see Figure 1). The short rafter-framed section of roof above the header ends at a two-ply girder truss. Beyond that point, the great room ceiling was framed with scissors trusses.

Windows. The header dictated the shapes of the curved windows below, which were custom-made by Marvin from cardboard templates we provided. The three fixed clad-wood

Dropping a Vaulted Ceiling

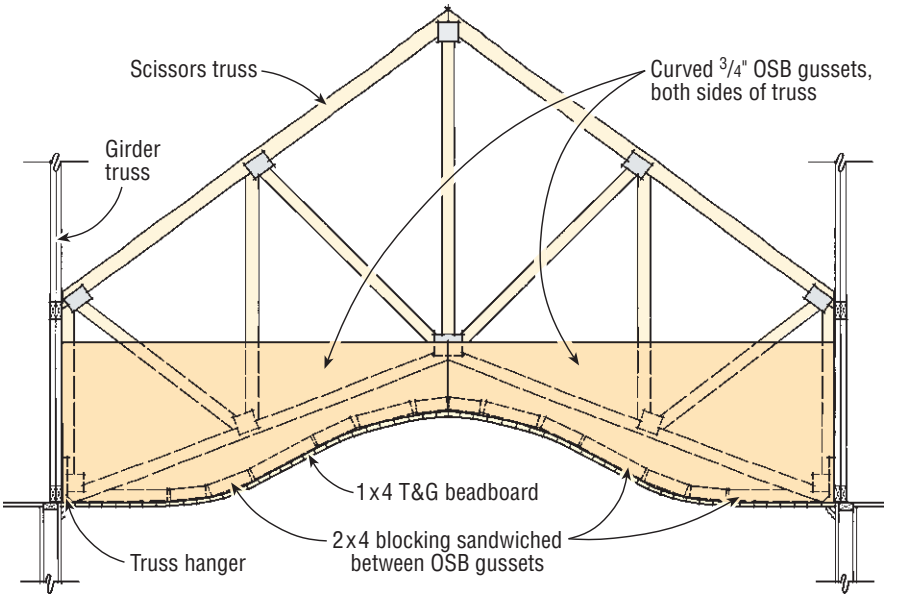


Figure 2. To carry the eyebrow shape into the living space, curved OSB gussets were nailed to each side of the scissors trusses framing the great room. Although the gussets and ceiling added little to the structural load, the roof trusses were engineered with the added weight in mind.

units cost $3,500 and involved an eight-week wait, but we were very happy with the way they fit the space.

Dropping the Ceiling

To carry the eyebrow profile across the ceiling, we scribed the necessary curve on a series of identical gussets cut from 3/4-inch OSB. Establishing the shape of the first gusset involved some basic math, a compass made from a pencil and a long piece of string, and a certain amount of head scratching. Once we'd worked out the required curve, though, we were able to use the first gusset as a pattern for those that followed. All the gussets, including the first one, were marked and cut while lying flat on the deck.

We nailed a pair of gussets to each truss, using string lines to keep everything in alignment (Figure 2).

Blocking and beadboard. To provide a nailing surface for the beaded fir ceiling, we sandwiched 2x4 blocking between the OSB gussets. Depending on the amount of curvature, the lengths of blocking varied from 2 feet or so down to about 8 inches.

Instead of shaping the blocking to match the curve, we simply made sure it didn't project beyond the gussets at any point, which allowed the ceiling boards to bear against the OSB rather than the blocking. We angled the ends of the blocking so adjoining pieces butted tightly together end to end, eliminating the possibility of driving nails into gaps between lengths of blocking. Finally, we blind-nailed the 1x4 fir ceiling to the blocking (Figure 3).

Figure 3. The finished ceiling of beaded fir boards was blind-nailed to blocking sandwiched between the OSB gussets.

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