Installing Curved Exterior Trim

Accurate framing and full-size millwork templates guaranteed a precise fit

by Chris Case

Our company builds custom homes along Maine's Midcoast. Over the last few years, this scenic area between Searsport and Brunswick has become popular with retirees and second-home buyers.

One of our current projects is a large beachfront home with two round towers, each with a conical roof. Trimming out the exterior of a tower can be slow and tedious, but with thorough planning, a skilled crew, and a good millwork shop, a job like this can be manageable and — if the weather is good — fun.

Preparation

Precise roof framing is always important, but it's especially crucial with a tower, because any inconsistencies with the framing will create humps or flat spots in the trim. Therefore, as we set the rafters, we double-checked the overhangs to keep the variance to within 1/8 inch (see Figure 1, next page).

Figure 1. Accurate framing is critical for a good-looking curved trim job. In this case, the rafter tails lined up to within 1/8 inch, measured from the plate. The curved plates were built up from four layers of 3/4-inch plywood, glued and screwed together.

We used pie-shaped pieces of 1/2-inch fir plywood for the roof sheathing and covered the whole roof with a layer of Grace Ice & Water Shield. Roofing felt doesn't stand up for long to coastal winds, and the lengthy construction on this job made the self-adhering eaves membrane a good choice for a temporary roof.

We've found that good staging is critical to making tricky work like this go smoothly, so when we got to the point of sheathing the roof, we set up pipe scaffolding. We kept the scaffolding in place until the tower's cedar shingles were installed and the trim had a second coat of paint.

Soffits

The architect's design called for tongue-and-groove beaded fir soffits arranged in a diagonal pattern. The soffits butt to a square-edged piece of mahogany, where a decorative knee bracket would be attached later (Figure 2, next page).

As with the framing, we spent some extra time laying out soffit bays so that they'd all be exactly the same size. We marked the inside curve on the first soffit board by holding it in place and scribing it with a compass. We worked our way out toward the fascia, blind nailing through the tongue with a trim nailer. Running the soffit 3/8 inch past the rafter tail allowed us to slip it into a dado on the back of the curved fascia (Figure 3, page 4). At the last course, we used a 3/8-inch-thick piece of stock held against the plumb cut on the rafter tails to scribe a fair curve.

Templating

The next step was to make 1/4-inch-thick plywood templates of the curved fascia and the curving frieze board that would circle the top of the tower below the soffit. Using the soffits, we scribed the 8-foot sheets in place and then sent them to the millwork shop that supplied the trim, Tidewater Millwork of Woolwich, Maine.

Fitting Straight Windows Into a Curved Wall

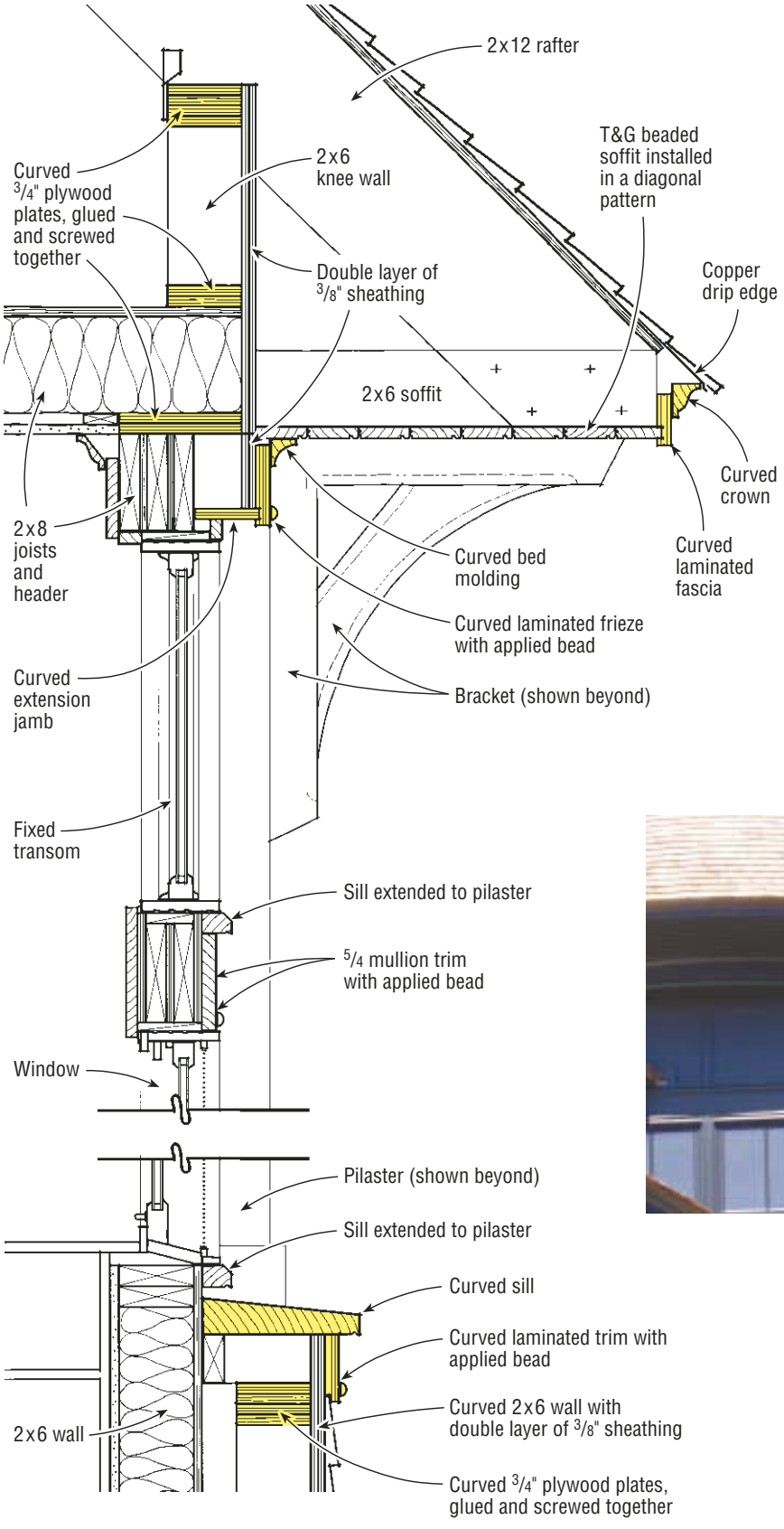

Figure 2. The home's original design called for curved sash, but the custom windows proved too expensive. Instead, the walls of the tower were framed like an octagon, but with curved jamb extensions above and curved sills below to transition from flat to round. Wide pilasters at each corner of the octagon separate the windows and receive decorative brackets at the top.

Figure 3. To produce the curved fascia, the crew first installed the T&G soffit (above), using a flexible straightedge held against the rafter tails to scribe the radius on the outer pieces. The soffit was then traced and the exact curve provided to the millwork shop. The curved fascia (above right), glued up from strips of Honduras mahogany, was made with a 1/2-inch-deep dado to accommodate any slight irregularities in the edge of the soffit. A stepladder allowed the cut man to reproduce the trim's installed position at the saw (right).

Tidewater determined the radius from our original templates and, using 1/4-inch laminations of mahogany, made the fascia and frieze boards to match. The radius of the decorative crown applied to the fascia was determined by adding its thickness to our original templates. For the frieze and other components with a smaller radius than the fascia, we subtracted the width of the overhang from the original template.

After calculating the actual amounts of curved trim, we ordered 6 extra feet to account for waste. The shop used a CNC router to cut out a template for the clamping station and then screwed L-shaped blocks to it for the glue-up. Once dry, the blanks were cut to width and sanded. The crown, band, and bed molding were profiled on a tilting-head shaper using custom-ground knives. By making repeated passes with the shaper while gradually bringing its head to a 45-degree angle (the spring angle of the crown), the shop avoided hogging out too much material at once.

It took the shop about a month to make the curved trim. When it arrived on the job, we primed it with two coats of A-100 oil-based primer by Sherwin-Williams (800/331-7979, www.sherwin-williams.com). Our painting contractor had it tinted gray to better match the dark-green top coat.

Figure 4. The trim was initially cut at the roof's pitch, then scribed for a closer fit with cedar shingles (top left). After installation (top right), the carpenters fine-tuned the joints with a random-orbit sander (left), then primed nail and screw holes to prevent weathering (above). The painter would later fill the holes with auto-body compound.

Curved Fascia and Crown

We cut the fascia and the other curving trim with a dual-bevel sliding miter saw equipped with an 80-tooth carbide-tipped blade. It's not always easy getting the correct miter and bevel settings when you're working with curved material, so when we found settings that worked, we recorded them for future cuts. We also used the same cut man for the entire trimming process. As you might imagine, this custom-made trim isn't cheap (the crown was $80 per foot and the curved fascia $35 per foot), so we always erred on the side of caution, thinking it better to be conservative and make a recut or two than waste material.

The first piece of trim to go up was the curving fascia that butts into the main roof. We made an initial cut by approximating the roof pitch and then we made a more accurate cut by scribing the trim in place (Figure 4). We fastened the first piece of fascia and then worked our way around the tower.

We have found that a cordless nail gun saves setup time and makes high work like this easier. But before we nailed anything off, we ran in a couple of screws. The screws allowed us to make adjustments if necessary and ensured that the trim was pulled tight to the framing. A pair of cordless drills is a good idea, too, because they eliminate the need to constantly swap drilling and driving bits. We sanded the joints and

Figure 5. The crew positioned the crown molding so its top edge would be covered by the copper drip edge (top left). Quick-adjusting bar clamps kept the crown tight to the fascia while it was fastened (top right). To avoid gaps caused by seasonal movement, the carpenters used scarf joints. The cuts were spot-primed and the joints sealed with a healthy dose of caulking (above left), then fastened with stainless screws (above right).

spot-primed where needed as we went along. Spot-priming is important because it keeps the wood from weathering, which could prevent good adhesion of the top coat.

Next, we installed the curved crown. Without the roofing or drip edge in place, we positioned the crown by holding it against a pair of squares simulating the position of the shingles (Figure 5). Before fastening, we pulled the crown tight to the fascia with bar clamps, ran in some screws, and then finished it off with a cordless framing nailer. We like to use scarf joints instead of butt joints at seams, because scarf joints are less likely to open up with seasonal movement.

Installing the Frieze

With the crown in place, we turned our attention to the frieze board. The frieze finishes off the top of the tower and gives some visual interest to this area. It's composed of three pieces: the frieze, a bed molding at the top, and a small band molding near the bottom.

The frieze covers the window's curving head jamb with a slight reveal; because it has a bed molding at the top, we left a gap to save material (Figure 6, next page). For the frieze board, we started where the tower roof ties into the main roof. As with the curved fascia, we made a rough approximation of the angle by using the roof pitch as a guide;

Figure 6. The curved window jamb extensions (left) were installed slightly proud so they would disappear into the dado on the back of the curved frieze (below left). A bed molding hides the gap at the top of the frieze while the applied bead (below) adds visual interest.

then we scribed the frieze in place for a more accurate cut. Because we had solid framing behind the frieze, we didn't need screws or clamps to draw it tight; we just used the cordless framing nailer.

With the frieze circling the entire top of the tower, we installed the bed and band molding. The bed hides the gap at the top of the frieze. It was installed — like the crown molding — on the fascia. Similarly, a decorative band molding was installed near the bottom of the frieze.

Before taking down the scaffold, we had our painter fill all the nail holes with auto-body filler and paint the trim with two coats of acrylic-latex Super-Paint from Sherwin-Williams. Then the roofer installed a custom copper drip edge fabricated by Coastal Copper and Slate in Rockland, Maine, to support the overhanging cedar shingles and to finish off the crown detail.

Once we had all of the parts from the mill shop, trimming out the towers went smoothly. With three carpenters, installing the windows and exterior trim took just over a week to complete.

We estimated the labor for this home based on labor costs for past projects and then increased the amount by 25 percent to account for the home's added complexity.

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