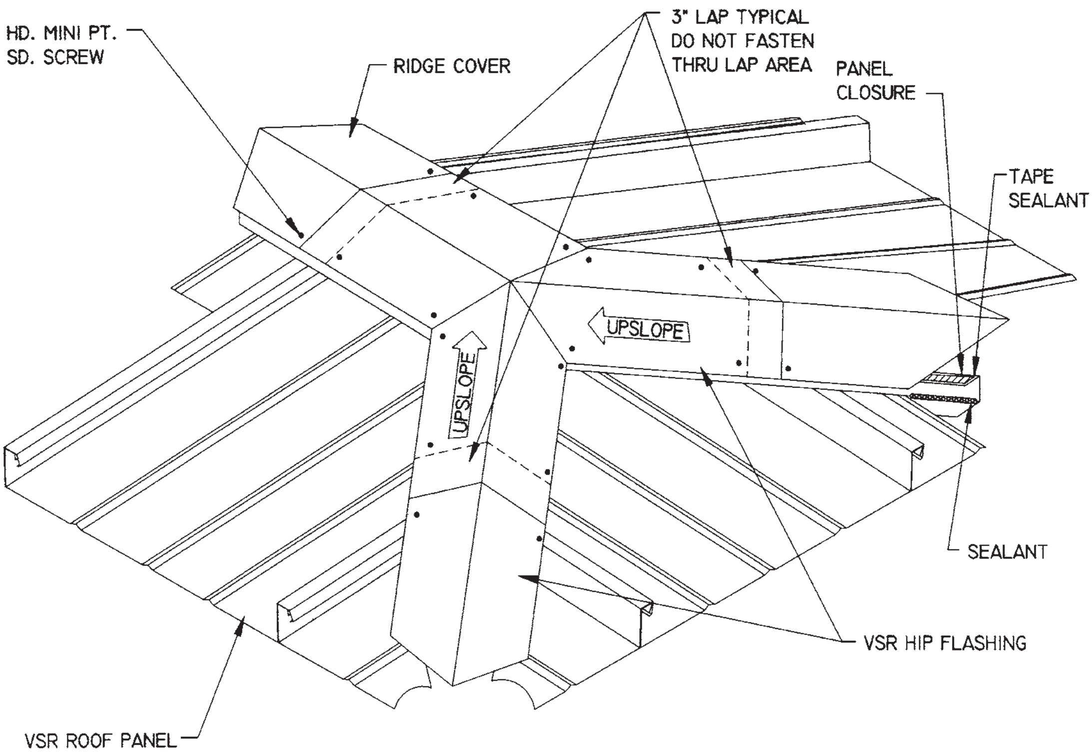

FIGURE 6.34 Ridge-to-hip transition detail with Butler's VSR panels. (*Butler Manufacturing Co.*)

through-fastened. Self-drilling screws are generally used for attachment to metal deck, screws or nails for attachment to wood.

Architectural panels generally fall into the water-shedding category. As such, they cannot contain standing water and require a layer of underlayment (waterproofing membrane) underneath. They are most commonly specified for roofs with relatively steep slopes. Their seams are often snapped together, with or without battens, and the seam height is smaller than that found in structural roofing. No sealants are normally used in the side laps.

The architectural roofing sheets are shorter than those of structural roofing, and they are normally specified for roofs less than 60 ft wide. Therefore, the roofing does not require the elaborate clips of Fig. 6.12. Instead, the panels simply slide back and forth over one-piece clips or cleats, such as those shown in Figs. 6.43 and 6.44. The clip spacing ranges from 1 to 5 ft, as required by resistance to the wind uplift forces. The most common spacing is 2–3 ft, and perhaps closer in roof areas subjected to high-wind negative pressures.

The panel ends can be connected to one another with fixed or floating laps. Either way, at least one panel is attached directly to the substrate. In the fixed lap (Fig. 6.44), the panel located upslope laps over the bottom panel, with a sealant in between, and both panels are through-fastened to a strip of continuous blocking. The fasteners are typically self-drilling screws selected for their compatibility with the substrate. The blocking is covered by underlayment for added weather protection. As with standing-seam roofing, the fixed lap is usually provided at a single point of each roof segment.

In a floating lap, only the bottom panel is through-fastened to the substrate. The upper panel hooks over an offset cleat attached to the substrate (Fig. 6.45). This connection allows the panels to

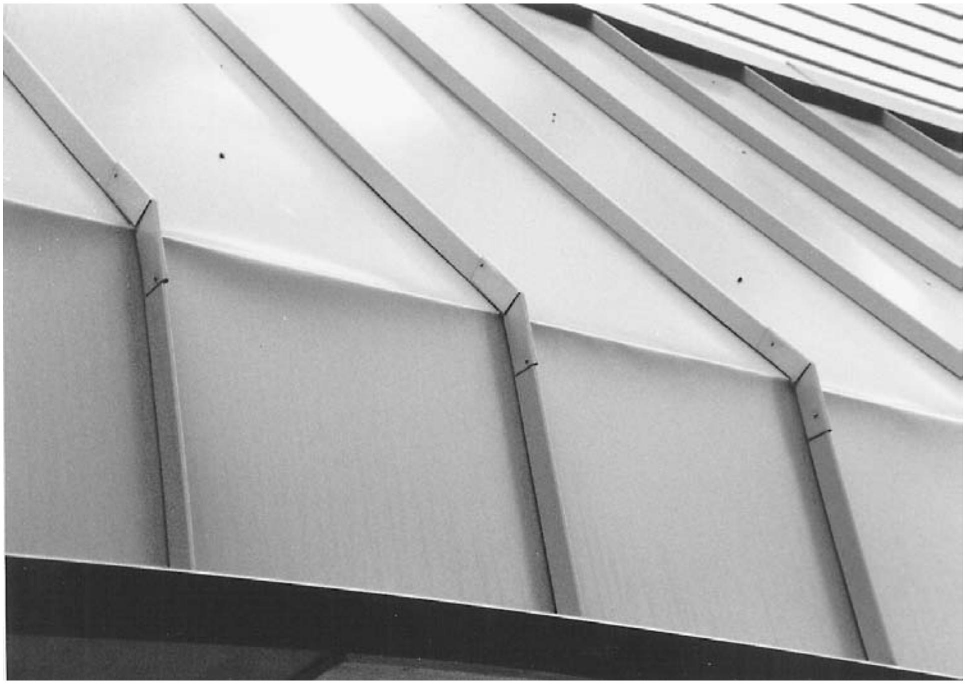

FIGURE 6.35 The line of roof-to-fascia transition occasionally comes out less than crisp.

move slightly relative to one another, although the sealant placed between them tends to limit their movement. (If the movement becomes excessive, the sealant could fail by excessive stretching or debonding.)

In any case, as already noted, the primary waterproofing membrane in architectural roofing is not the metal but the underlayment. It is therefore essential to properly detail the splices, penetrations, and termination details of the underlayment, as in any other type of waterproofing. The membrane material should be selected with care, as some products tend to melt under metal roofing in the summer heat. The available products range from the conventional 30-lb organic felt to a self-sealing rubberized asphalt membrane.

One of the most common problems of architectural roofing is the failure of the installers to extend the membrane beyond the edge of the eave strut. Here, a parallel with wall flashing is instructive. As curtain-wall designers are well aware, effective flashing extends beyond the face of the wall. If the flashing stops at the face of the wall—or worse, within it—water can find its way under the flashing and into the wall. A similar situation can occur with the underlayment that is not properly terminated.

The preferred way of terminating underlayment is to extend it into the gutter, so that any water carried by the membrane would be drained away. Or, at the very least, the edge of the underlayment should be turned down over the wall siding and protected with eave flashing, as in Fig. 6.46.

6.8 PANEL FINISHES

Nothing can detract more from the appearance of a metal building system than a sight of rusted corrugated roofing. Fortunately, modern metal finishes not only offer good looks but also protect the