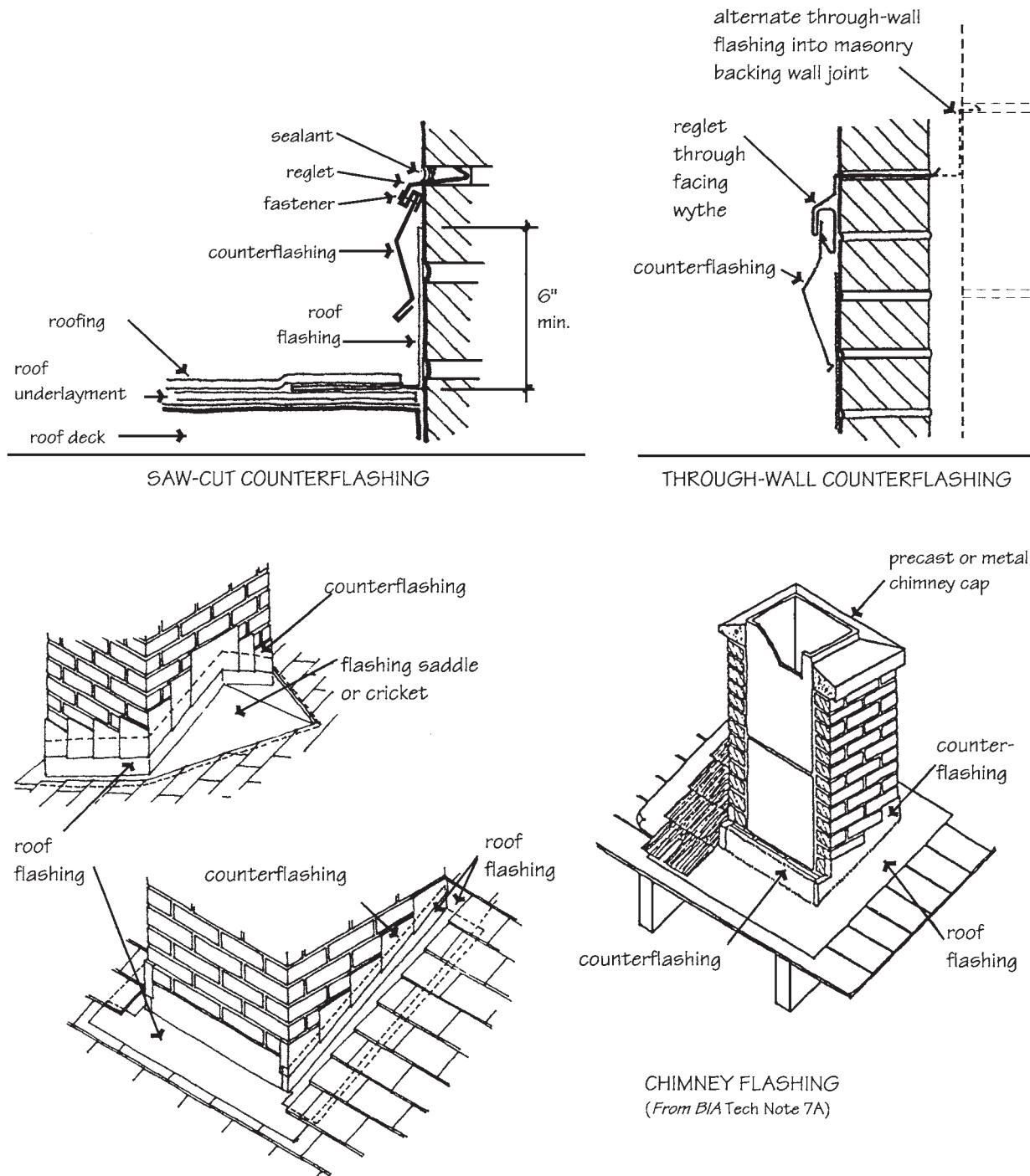




**Figure 9-40** Protruding window invites leaks at head.

Chapter 6 for mortar type recommendations). All head and bed joints must be fully mortared and tooled for effective weather resistance. The concave and V joints shown in *Fig. 9-44* are most effective in excluding moisture at the surface. Steel jointing tools compress the mortar against the unit, forming a tight bond at the unit-mortar interface, but mortar joints that are improperly tooled will allow water to penetrate freely (*see Figs. 9-45 and 9-46*). Mortar must be mixed with the maximum amount of water to assure good bond. The mortar mix must contain enough water to provide good workability and to assure complete hydration of the cement even after the water content has been reduced by unit suction. Optimum water content is also affected by weather conditions, so the mason should be allowed to judge the necessary amount based on workability. In hot, dry, or windy conditions, moist curing of the masonry after construction (for both clay and concrete units) can enhance bond and weather resistance by assuring proper hydration (*see Chapter 15*).

Masonry walls should be protected at the top by a roof overhang or roof edge flashing. When parapets are necessary to the design, they should be carefully detailed to allow expansion, contraction, and differential movement, and to prevent water from penetrating the wall (*see Chapter 10*). Parapets have more extreme weather exposure than the rest of the wall, because the tops and edges of buildings get wet every time it rains while walls may stay dry depending on wind direction and duration of rain event (*see Fig. 9-47*). Since much of the water that penetrates masonry walls enters at the top, a roof overhang or protective fascia detail can eliminate many moisture problems, but parapets can be designed with effective weather protection. The details in *Figs. 9-48 and 9-49* illustrate both metal cap flashings and precast concrete or cast stone copings. Brick, concrete masonry, and precast concrete have different expansion and contraction characteristics, which can cause cracking and separation of mortar joints in a masonry coping (*see Fig. 9-50*). The mortar joints between precast or cast stone coping units should be raked out and filled with a sealant and bond breaker to assure adequate resistance to the penetration of rain or melting snow.



**Figure 9-41** Flashing and counterflashing at roof–wall intersections and chimneys.

It is also difficult to anchor coping units mechanically without compromising the integrity of the flashing membrane. In high-wind areas, coping units should be as large and heavy as practical to resist wind uplift. For additional wind resistance, adjacent units can also be linked together by inserting stainless steel pins into holes drilled into the head joints. Brick