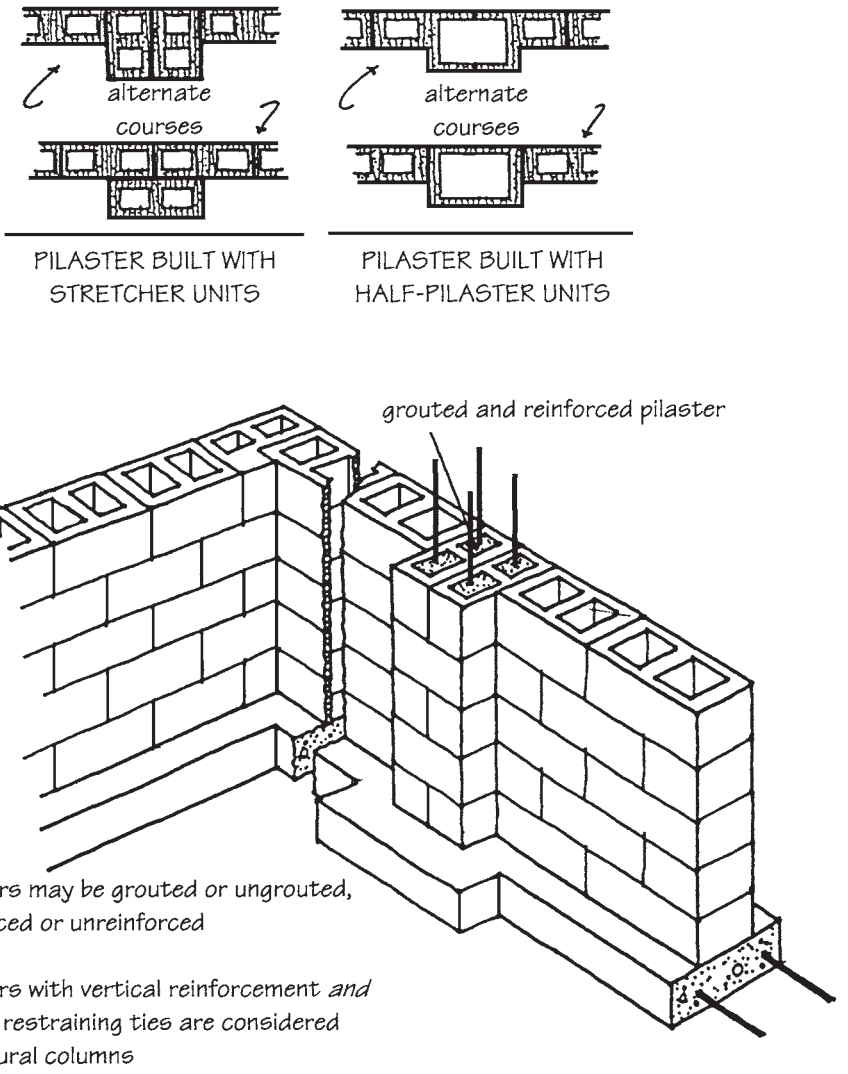

Figure 10-32 Single-wythe CMU wall pilasters.

a rubber membrane or sheet metal up between two half-thickness units at the flashing course (*see Fig. 10-33*). Penetrations at vertical reinforcing bars must then be sealed to maintain the integrity of the flashing.

Most of the water which penetrates single-wythe walls will flow downward through ungrouted cores to the flashing and weeps. Whenever there is excessive water penetration at the exterior wall face, there is the risk of water migrating across the unit webs and wetting the interior wall surface. Inadequate mortar bond and poor joint tooling workmanship can allow such excessive water penetration (*see Fig. 10-34*). Extra care is warranted in single-wythe walls because they lack the redundant protection of a true drainage cavity and are therefore less forgiving of design and construction errors. Water-repellent admixtures and field-applied water repellents cannot compensate for poor design or workmanship and should not be relied upon to prevent water penetration.

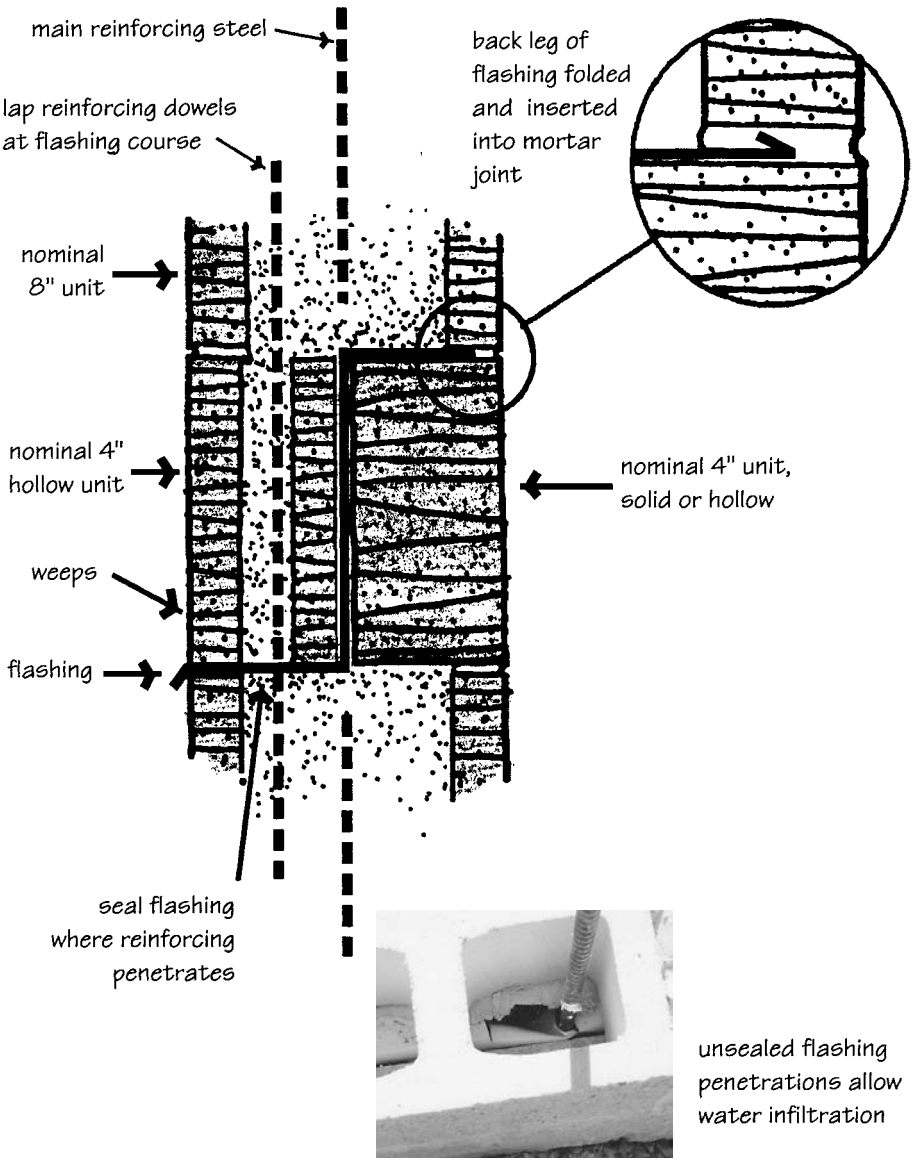

Figure 10-33 Vertical reinforcing steel is needed in single-wythe walls because flashing disrupts the mortar bond, but penetrations through the flashing must be sealed to prevent water infiltration.

10.5 MULTI-WYTHE WALLS

Multi-wythe masonry walls include both composite walls and cavity walls as described and illustrated in Chapter 8. Historic structures were generally built with loadbearing composite walls bonded with masonry headers. Composite walls today are usually only two wythes in thickness and are bonded with metal ties, but they are still typically loadbearing in application and much less commonly used than cavity walls. In cavity walls the backing and facing wythes are separated by an open drainage cavity for better protection against water penetration and connected with adjustable metal ties. Cavity walls may be either loadbearing or non-loadbearing. In loadbearing applications, the backing wythe typically supports axial loads from the floor and roof systems and the facing wythe supports only lateral wind loads and its own weight.