

Steel Columns

with Expansion Joints at the Corner

Expansion joints are typically required at wall corners. The joint should be constructed 1 ft to 3 ft on one side of the corner. If the expansion joint spacing exceeds 10 ft, then two (one on each side) should be installed.

Concrete masonry can be connected to the column with a rigid or flexible anchor. For flexible connections, a debonded shear anchor should be mechanically fastened to the column and embedded into the concrete masonry at 16-in. vertical intervals. This anchor resists out-of-plane (but not in-plane) shear forces and permits differential movement between the steel column and concrete masonry. A control joint is not required in the concrete masonry if the connection is flexible.

Reinforcement must be discontinuous at the expansion joint. The expansion joint should be totally void of any material which might inhibit movement.

The outer wythe of brick should be connected to the column with adjustable ties. This task can be accomplished by fabricating the steel column with deformed rods welded onto the outer flange. Masonry loop ties can engage the welded rod and be solidly embedded into the brick

wythe. This connection laterally braces the brick wythe, but does not inhibit in-plane movement of the brick.

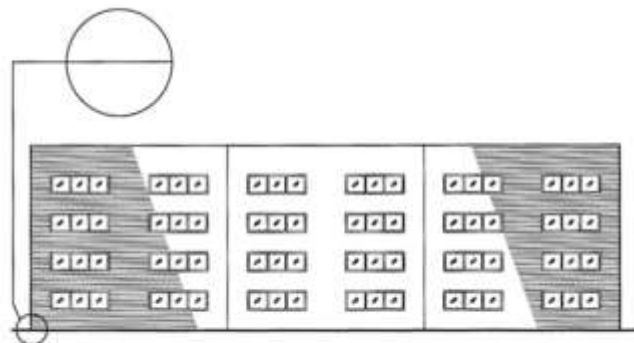
A difficult flashing condition exists at the corner where the concrete masonry abuts the brick. Flashing ends are usually placed into the head joints in the concrete masonry wythe.

A flashing dam or pocket must be formed within the column. A heavy bed of mastic should be applied to the back-side of the flashing and set tightly against the column. Setting two bricks or a concrete masonry unit between the flanges at the base of the column allows the end of the flashing to be neatly stepped and sealed onto the column's web.

Also, installing a prefabricated flashing corner eliminates fish mouths and other points of water entry that might be created when flashing is cut and pieced together at the center.

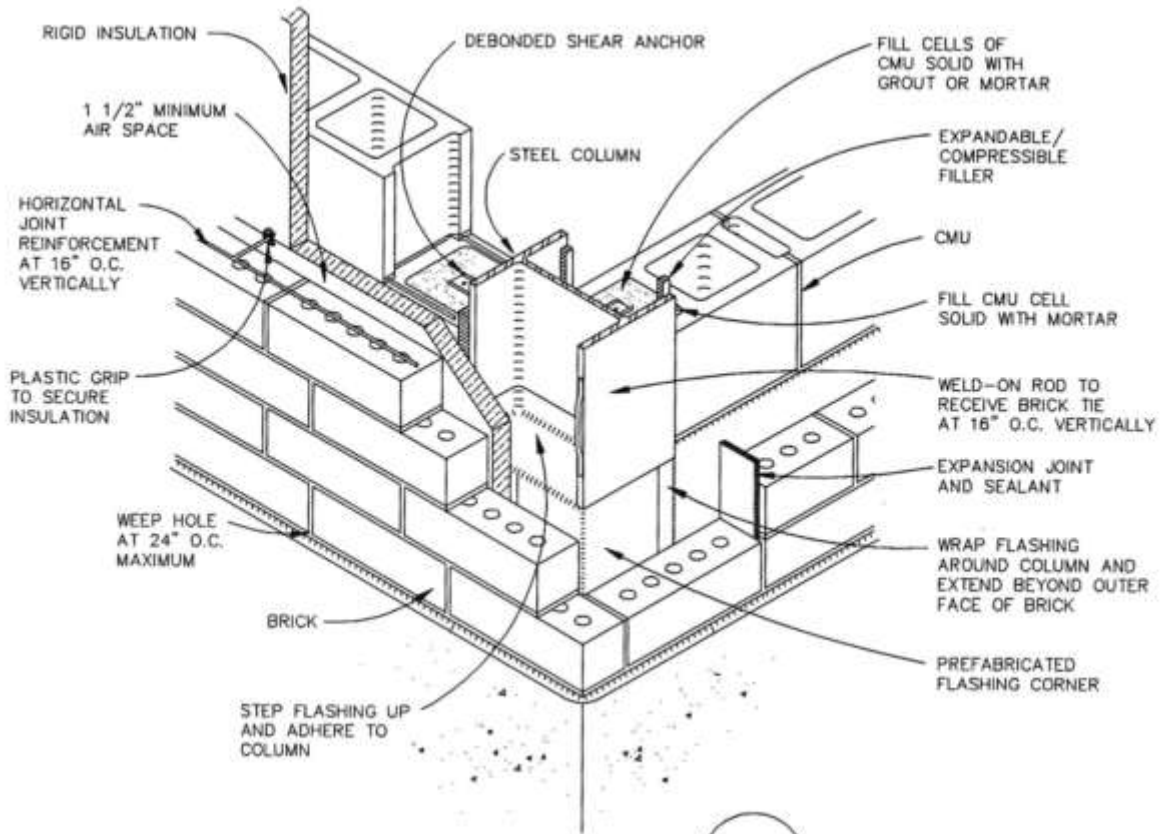
Additional information on this general subject is available in the "Masonry and Steel Detailing Handbook" authored by Walter A. Laska. The price for the 218-page book is \$51, and it can be ordered at www.wocbookstore.com.

Elevation View

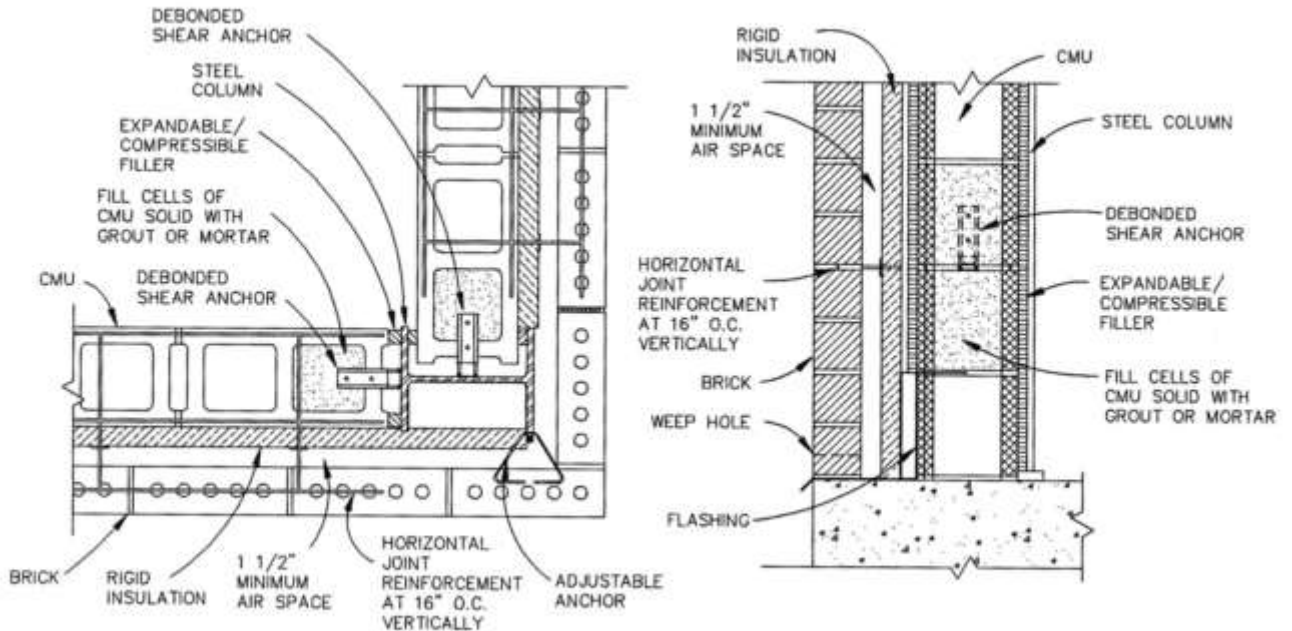


Elevation

Isometric View



Isometric



Plan View

Cross Section