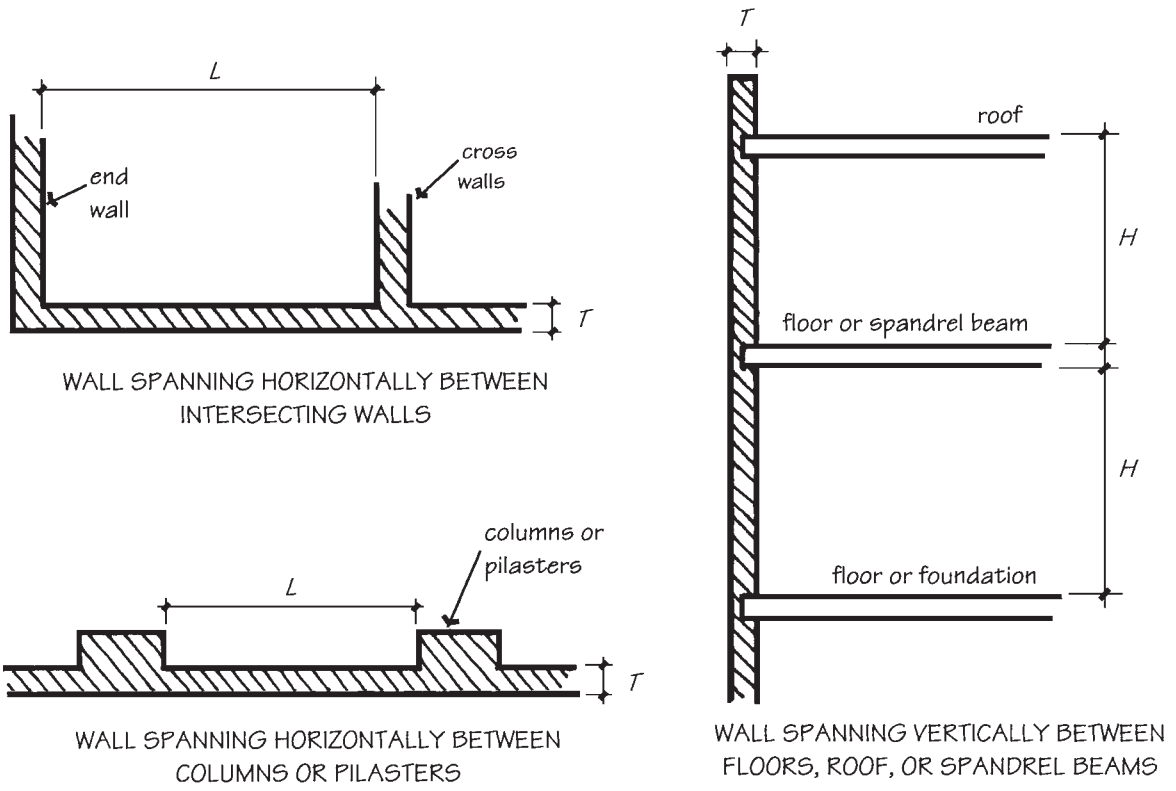


Empirical Span-to-Thickness Ratios for Lateral Support of Masonry Walls

Wall or Element	Maximum Unsupported Height or Length to Nominal Thickness (*L*/*T* or *H*/*T*)
Bearing walls	
solid or grouted solid	20
all other walls	18
Non-bearing walls	
exterior	18
interior	36

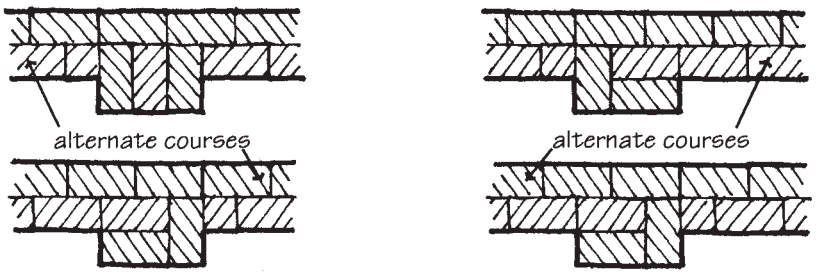
(*Based on requirements of the MSJC* Building Code Requirements for Masonry Structures ACI 530/ASCE 5/TMS 402, *and* International Building Code 2003)

Figure 12-21 Lateral support requirements for empirically designed masonry.

analytically). Foundation walls must meet the thickness requirements shown in Chapter 13, and must be constructed with Type M or Type S mortar. If wall height, lateral support, or unbalanced fill conditions exceed code limits, foundation walls must be designed analytically rather than empirically.

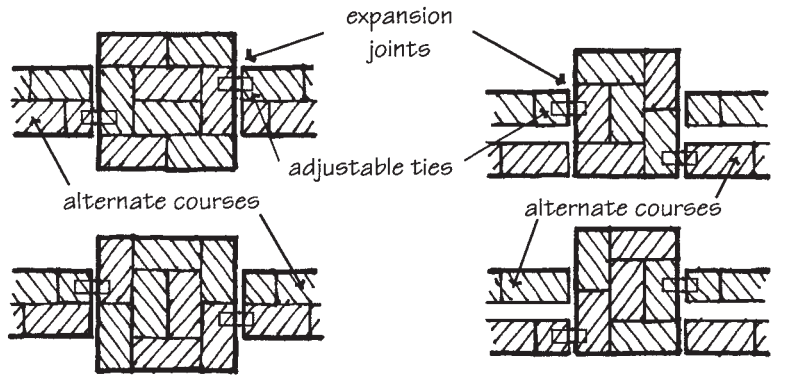
12.2.4 Bonding

Multi-wythe walls may be bonded with masonry headers (*see Fig. 12-28*), metal ties (*see Figs. 12-29 and 12-30*), or prefabricated joint reinforcement (*see Figs. 12-29 and 12-30*). Spacing requirements are different for rigid and



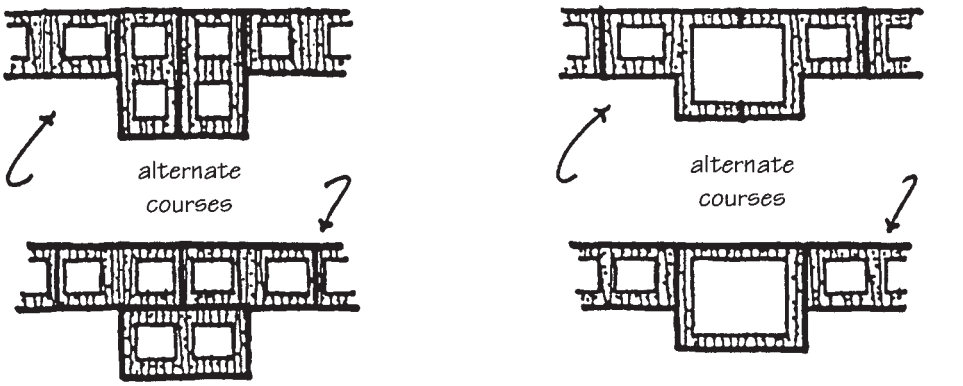
MASONRY UNIT BONDED BRICK PILASTERS

Pilasters connected to walls with unit bonding or rigid metal ties do not accommodate clay masonry expansion. Movement must be accommodated at other locations to prevent cracking.



ADJUSTABLE METAL-TIE BONDED BRICK COLUMNS

Adjustable ties and expansion joints are required to accommodate clay masonry expansion. Supporting elements function as unreinforced columns rather than pilasters.



CMU PILASTER BUILT WITH STRETCHER UNITS

CMU PILASTER BUILT WITH HALF-PILASTER UNITS

Figure 12-22 Unreinforced columns and pilasters for lateral support of empirically designed masonry walls.