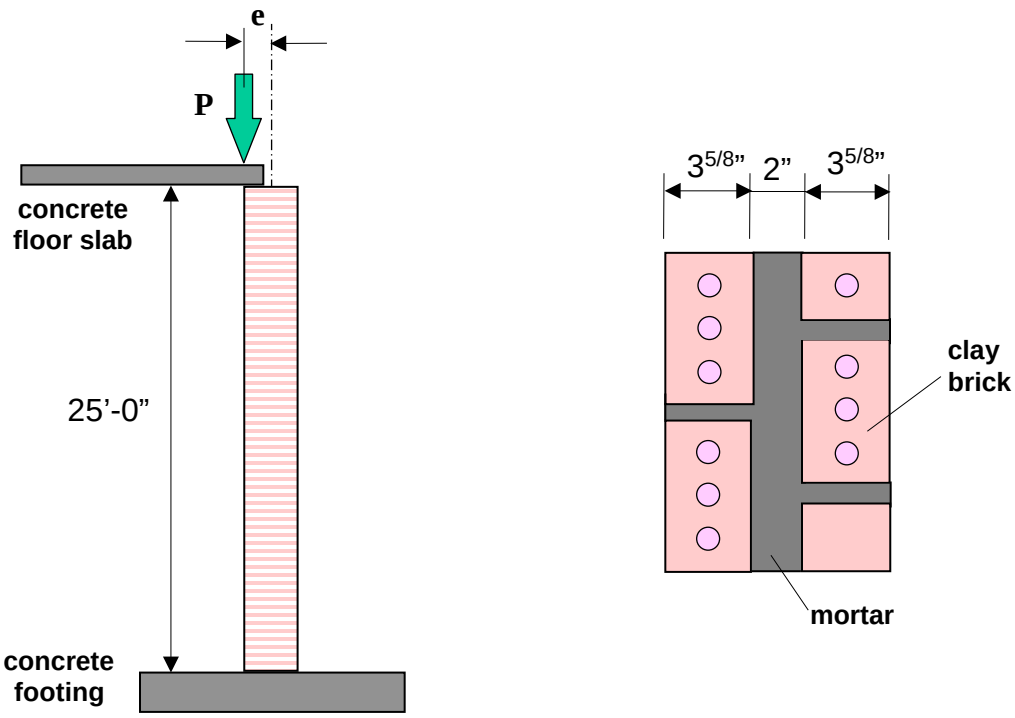
MASONRY STRUCTURES

Part 1: For the unreinforced masonry wall shown below, determine the maximum load per foot per the 2005 MSJC requirements that can be applied at an eccentricity equal to:

(a) 0.00”
(b) 1.50” and
(c) 3.00”

The wall consists of a double wythe of clay brick (flat-wise compressive strength equal to 6000 psi) which is laid in Type S mortar (made with masonry cement). No prisms are tested.



Part 2: Determine the maximum vertical force per foot that can be applied to the wall if the tensile strength is assumed to be equal to zero. Assume that the maximum compressive stress is limited to the value set by the 2005 MSJC for allowable axial compressive stress. All other parameters are the same as described above.

Part 3: The unreinforced brick wall shown below is subjected to a compressive load at the top equal to 15.0 kips per foot which is applied 1.3 inch from the wall centerline. Check if the wall meets requirements of the 2008 MSJC code for the case of gravity loading. Also determine the maximum lateral wind load that can be applied in pounds per square foot. Note that prism compressive strength has been determined from tests to be equal to 3000 psi. Solid clay units are used with Type S mortar made with Portland Cement.