one-eighth of the nominal member thickness and shall not exceed one-quarter of the least clear dimension of the cell, course, or collar joint in which it is placed. The area of reinforcing bars placed in a cell or in a course of hollow unit construction shall not exceed 4 percent of the cell area.

14.4.4.2.2 Splices Lap splices shall not be used in plastic hinge zones of special reinforced masonry shear walls. The length of the plastic hinge zone shall be taken as at least 0.15 times the distance between the point of zero moment and the point of maximum moment. Reinforcement splices shall comply with TMS 402/ACI 530/ASCE 5 except paragraphs 2.1.9.7.2 and 2.1.9.7.3 shall be modified as follows:

2.1.9.7.2 Welded Splices: A welded splice shall be capable of developing in tension at least 125 percent of the specified yield strength, f_y, of the bar. Welded splices shall only be permitted for ASTM A706 steel reinforcement. Welded splices shall not be permitted in plastic hinge zones of intermediate or special reinforced walls of masonry.

2.1.9.7.3 Mechanical Connections: Mechanical splices shall be classified as Type 1 or Type 2 according to Section 21.1.6.1 of ACI 318. Type 1 mechanical splices shall not be used within a plastic hinge zone or within a beam-wall joint of intermediate or special reinforced masonry shear wall system. Type 2 mechanical splices shall be permitted in any location within a member.

14.4.5 Modifications to Chapter 3 of TMS 402/ACI 530/ASCE 5

14.4.5.1 Anchoring to Masonry

Add the following as the first paragraph in Section 3.1.6 to TMS 402/ACI 530/ASCE 5:

3.1.6 Anchor Bolts Embedded in Grout. *Anchorage assemblies connecting masonry elements that are part of the seismic force-resisting system to diaphragms and chords shall be designed so that the strength of the anchor is governed by steel tensile or shear yielding. Alternatively, the anchorage assembly is permitted to be designed so that it is governed by masonry breakout or anchor pullout provided that the anchorage assembly is designed to resist not less than 2.5 times the factored forces transmitted by the assembly.*

14.4.5.2 Splices in Reinforcement

Replace Sections 3.3.3.4(b) and 3.3.3.4(c) of TMS 402/ACI 530/ASCE 5 with the following:

(b) A welded splice shall be capable of developing in tension at least 125 percent of the specified yield strength, f_y, of the bar. Welded splices shall only be permitted for ASTM A706 steel reinforcement. Welded splices shall not be permitted in plastic hinge zones of intermediate or special reinforced walls of masonry.

(c) Mechanical splices shall be classified as Type 1 or Type 2 according to Section 21.1.6.1 of ACI 318. Type 1 mechanical splices shall not be used within a plastic hinge zone or within a beam-column joint of intermediate or special reinforced masonry shear walls. Type 2 mechanical splices are permitted in any location within a member.

Add the following new Section 3.3.3.4.1 to TMS 402/ACI 530/ASCE 5:

3.3.3.4.1 *Lap splices shall not be used in plastic hinge zones of special reinforced masonry shear walls. The length of the plastic hinge zone shall be taken as at least 0.15 times the distance between the point of zero moment and the point of maximum moment.*

14.4.5.3 Coupling Beams

Add the following new Section 3.3.4.2.6 to TMS 402/ACI 530/ASCE 5:

3.3.4.2.6 Coupling Beams. *Structural members that provide coupling between shear walls shall be designed to reach their moment or shear nominal strength before either shear wall reaches its moment or shear nominal strength. Analysis of coupled shear walls shall comply with accepted principles of mechanics.*

The design shear strength, ϕV_n, of the coupling beams shall satisfy the following criterion:

$$\phi V_n \geq \frac{1.25(M_1 + M_2)}{L_c} + 1.4V_g$$

where

M_1 *and* M_2 = *nominal moment strength at the ends of the beam*

L_c = *length of the beam between the shear walls*

V_g = *unfactored shear force due to gravity loads*

The calculation of the nominal flexural moment shall include the reinforcement in reinforced concrete roof and floor systems. The width of the reinforced concrete used for calculations of reinforcement shall be six times the floor or roof slab thickness.