The contract documents specify W 2.8 (3/16 in. wire) joint reinforcement in concrete masonry unit (CMU) walls. **We request to use standard, W1.7 (9 gage) joint reinforcement in CMU walls except at locations where joint reinforcement is being used as shear reinforcement for walls that are part of the lateral load resisting system.**

Section 1.2.1 of the TMS 402 *Building Code Requirements for Masonry Structures* requires that all Code-required drawings items are shown on the project drawings:

> **1.2.1** Show all Code-required drawing items on the project drawings, including:
>
> (a) Name and date of issue of Code and supplement to which the design conforms.
>
> (b) Loads used for the design of masonry structures.
>
> (c) Specified compressive strength of masonry at stated ages or stages of construction for which masonry is designed, for each part of the structure, except for masonry designed in accordance with Part 4 or Appendix A.
>
> (d) Size and location of structural members.
>
> (e) Details of anchorage of masonry to structural members, frames, and other construction, including the type, size, and location of connectors.
>
> (f) Details of reinforcement, including the size, grade, type, lap splice length, and location of reinforcement.
>
> (g) Reinforcing bars to be welded and welding requirements.
>
> (h) Provision for dimensional changes resulting from elastic deformation, creep, shrinkage, temperature, and moisture.
>
> (i) Size and permitted location of conduits, pipes, and sleeves.

Specifically, this requires that the "size and location of structural members" are shown and requires provision for dimensional changes resulting from elastic deformation, creep, shrinkage, temperature, and moisture.

For concrete masonry construction, the Concrete Masonry and Hardscapes Association has published CMU-TEC-009-23 which specifically addresses crack control strategies for concrete masonry construction. In addition to providing control joints, CMHA recommends providing a minimum area of reinforcement of 0.025 $in^2$/ft of height for units with a nominal height of 8 inches, which translates to horizontal reinforcement spaced as indicated in Table 3 which is copied below.

| TABLE 3: Maximum Spacing of Horizontal Reinforcement to Provide 0.025 in.²/ft. (52.9 mm²/m) of Masonry Height | |
|---|---|
| **Reinforcement Size** | **Maximum Spacing, in. (mm)** |
| W1.7 (9 gage) (MW11)[A] | 16 (406) |
| W2.1 (8 gage) (MW13)[A] | 16 (406) |
| W2.8 (3/16 in.) (MW18)[A] | 24 (610) |
| No. 3 (M#10) | 48 (1,219) |
| [A]Minimum two wires per course. | |

As shown, for standard CMU wall construction, the industry standard of W1.7 (9 gage) joint reinforcement spaced at 16 inches on center satisfies the crack control recommendations for units with a nominal height of 8 inches.

W2.8 (3/16 in. wire) joint reinforcement poses additional construction challenges which were published in an article by The Masonry Society (TMS) in Volume 18 No. 1 of TMS Responds. Many of these challenges relate to conventional CMU wall construction using a nominal 3/8 inch joint. TMS 602 requires the joint thickness to be twice that of the joint reinforcement which creates issues with W2.8 (3/16 in. wire) joint reinforcement once it is fabricated and galvanized.

**We request to use standard, W1.7 (9 gage) joint reinforcement in CMU walls except at locations where joint reinforcement is being used as shear reinforcement for walls that are part of the lateral load resisting system. If such walls exist, they must be identified in the project drawings as required by TMS 402 Section 1.2.1.**