SECTION 04220

CONCRETE UNIT MASONRY

PART 1 GENERAL

1 01 DIVISION OF RESPONSIBILITIES TERMINOLOGY: **NOT USED**

1 02 SUMMARY: The Contractor shall provide concrete masonry infill where shown on the drawings, as specified in this Section, and as needed for a complete installation.

1 03 RELATED WORK: Section 09900-Painting, for masonry stain specification.

1 04 SUBMITTAL: The Contractor shall submit Coarse and Fine Grout Mix Designs meeting ASTM C476, and Mortar Mix Design meeting ASTM C270, to the Architect prior to placement, per Section 01340-Submittals.

1 05 QUALITY ASSURANCE: The Testing Inspection Agency will provide concrete masonry Grout and Mortar Field Test Reports per Section 01410-Construction Quality Control Services.

PART 2 MATERIALS

2 01 CONCRETE MASONRY:

A. Concrete Unit Masonry shall be equal to products by E. P. Henry, Woodbury NJ (856-845-6200). Where shown on the drawings, provide normal or medium weight hollow load bearing concrete masonry units comply with ASTM C90, Type I/Moisture Controlled, 1800 psi Compressive Strength; color "natural gray". Provide accessory shapes including, but not limited to corners and bond beams. All accessory shapes shall match the adjacent CMU texture

1. Drawing Key Symbol "CMU-1" (Split-Face): Standard Color Natural Grey.
2. Drawing Key Symbol "CMU-2" (Ground-Face): Standard Color Natural Grey.

B. Product Requirements:

1. Normal or medium weight hollow load bearing concrete masonry units per ASTM C90.
2. Type I/ Moisture-Controlled Units; 1800 psi minimum Compressive Strength.
3. Dimensions: Nominal 16" long by 8" high by the depth shown on the drawings.
4. Provide accessory shapes including, but not limited to corners and bond beams. All accessory shapes shall match the adjacent CMU texture

C. Bond: Running bond with tooled joint.

2 02 MORTAR & GROUT:

A. General:

1 Portland Cement: Comply with ASTM C150, Type I.
2 Aggregate: Provide clean, sharp, graded aggregate free from deleterious amounts of dust, lumps, shale, alkali, surface coatings, organics, and meeting ASTM C144.
3 Admixtures: Do not use admixtures unless specifically approved in advance.

B Mortar:

1 Lime: Provide hydrated lime complying with ASTM C207, or quicklime per ASTM C5.

2. Provide ONLY Type "M" or Type "S" mortar per ASTM C270. Type "N" mortar is NOT permitted.
3. Proportions: Masonry mortar shall be proportioned per ASTM C270-89.
4. Minimum: Compressive Strength: 2000 psi at 28 days.

C. Grout:

1. Provide grout in accordance with ASTM C476.
2. Fine and Coarse aggregate grout shall be proportioned per ASTM C476-83.
3. Minimum Compressive Strength: 3000 psi at 28 days.
4. Fine Grout: Provide where the grout space is less than 3" in its least dimension.
5. Coarse Grout: Provide in all reinforced masonry cells, masonry cells adjacent to reinforced cells requiring grout, and bond beams.

D. Non-shrink Grout: Per Section 03300-Cast-In-Place Concrete

2.03 REINFORCEMENT & ACCESSORIES:

A. Reinforcing: Contractor shall provide bars per ASTM A615, Grade 60; with bending per ACI 318; provide Wire Reinforcement per ASTM A82.

B. Truss-type Wall Reinforcement: The Contractor shall provide D/A 310 Truss by Dur-O-Wal Inc., Arlington Heights IL (708-577-6400).

1. Acceptable Alternative: Lox All Truss-Mesh, by Hohmann & Barnard Inc., Hauppage NY (516-234-0600).
2. Other product subject to Architect's approval per Section 01340-Submittals.

2.04 CONTROL JOINTS:

A. The Contractor shall provide Dur-O-Wal Rapid Rubber Control Joint or Rapid Poly-Joint D/A 2006 / 2007, by Dur-O-Wal Inc., Arlington Heights IL (708-577-6400).

1. Acceptable Alternative: Hohmann & Barnard #QS rubber control joint or #VS control joint, by Hohmann & Barnard Inc., Hauppage NY (516-234-0600).
2. Other product subject to approval of Product Substitution per Section 01340-Submittals.

2.05 CMU INFILL INSULATION: Provide loose perlite fill in all concrete masonry cells of new infill construction, that are not otherwise grouted solid for structural purposes

2.06 WALL FLASHING: The Contractor shall provide "Perm-A-Barrier", 40 mil rubberized asphalt and polyethylene sheet wall flashing, by W.R. Grace Masonry Products. PVC wall flashing is NOT permitted.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS: The Contractor shall examine the areas and conditions under which work of this Section will be provided; shall correct conditions detrimental to the timely and proper completion of the work; and shall NOT proceed until unsatisfactory conditions are corrected.

3.02 ENVIRONMENTAL CONDITIONS: Do not place masonry units when air temperature is below 40 degrees F. Protect masonry during construction from direct exposure to wind and sun when erected in ambient air temperature of 99 degrees F (shade), and less than 50% relative humidity

3.03 INSTALLATION:

A. Wall Flashings: Install at base of walls, over lintels, stepped flashing to follow roof slope at parapets, other locations Form end dams at horizontal flashing terminations to prevent water entry into the wall cavity. Provide manufacturer-approved sealant at overlaps forming end dams

B. Weep Holes: Provide weep holes at 32" o.c. at all cavity walls, above spandrel flashings, and above flashings over openings Weep holes shall be maintained with a cotton wick

C. Control Joints: Provide concrete masonry control joints where shown on the drawings, but at no more than 30'-0" intervals.

D. Cover top of CMU walls at the end of each day's work using waterproof, reinforced paper or canvas weighted down into position.

END OF SECTION