

**SECTION 04200**

**MASONRY**

**1. GENERAL**

- 1.1 All work included under this heading shall be subject to the General Conditions of the entire operation. The Contractor for this portion of the work is required to refer especially thereto.
- 1.2 This Contractor will be held responsible for obtaining a waterproof wall with all mortar joints filled with a full joint of mortar. The masonry foreman shall supervise carefully the work continuously; any work not complying with these specifications shall be torn down and replaced with proper workmanship.
- 1.3 Information called out on the Structural Drawings shall govern these specification.

**2. WORK INCLUDED**

This Contractor shall furnish all labor and materials to complete all masonry work as required by the drawings and/or herein specified, as follows:

- 2.1 All concrete block/masonry work indicated on the drawings.
- 2.2 All required anchors and ties.
- 2.3 Beam blocks, lintels, etc.
- 2.4 Wall flashing.

**3. DELIVERY, STORAGE & HANDLING**

- 3.1 Store masonry units on elevated platforms, under cover, and in a dry location to prevent their deterioration or damage due to moisture, temperature changes, containment's, corrosion, and other causes. If units become wet, do not install until they are in air-dried condition.
- 3.2 Store cementitious materials on elevated platforms, under cover, and in a dry location.
- 3.3 Store aggregates where grading and other required characteristics can be maintained, and contamination avoided.
- 3.4 Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

**4. MATERIALS**

**4.1 MASONRY TIES:**

**4.1.1 Truss Type:**

- a. Masonry wall reinforcement as noted on the plans shall be equal to Hohmann & Barnard, Inc design or approved equal truss design and shall be installed in strict accordance with the manufacturer's recommendations. Additional reinforcing at all corners and above openings.
- b. Material shall be standard weight 9-gauge cross rods and 9-gauge side rods galvanized. Install truss reinforcement at 16" o.c. vertically.

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### 4.1.3 Control and Expansion Joints:

As shown on the drawings. Care should be used to keep these joints free and open. Install water stops.

### 4.2 CONCRETE MASONRY UNITS:

Block-Lightweight Concrete Masonry units shall conform to the current ASTM C-90 for hollow load bearing grade "A" units. Block shall be Standard Haydite weighing not more than thirty (30) pounds per unit. All block shall be produced by either the high-pressure Autoclave curing system or "lo-Shrink" method to produce material acceptable to the Corps of Engineers Group II standards. Blocks shall be kept dry from point of manufacture until the units have been laid in the walls. Size and locations as shown on the Drawings.

4.2.1 Interior units with exposed outside corners (not covered with a finish material) shall be radiused.

4.2.2 Units scored to look like 8" x 8" units shall be used in the interior spaces where CMU is the finished material – refer to the drawings for additional information.

## 5. INSTALLATION AND WORKMANSHIP

### 5.1 GENERAL:

5.1.1 No masonry shall be erected when the ambient temperature is below 32 degrees F. on a rising temperature or below 40 degrees F. on a falling temperature or when there is a probability of such conditions existing within 48 hours, unless special provisions are made for heating the materials and protecting the work. Such provisions shall be approved by the Architect. Masonry work which has frozen before the mortar has set to the satisfaction of the Architect shall be removed and replaced.

5.1.2 Slush with mortar thoroughly around all windows and doors frames and all other built-in parts. Point with mortar around all windows and window sills, making this perfectly weathertight. Walls shall be built perfectly true, plumb and straight so as to work in courses to correspond with heights of all openings as indicated on the drawings. Where reinforced concrete floors or slabs extend into walls, brick work shall be built above such floors or slabs only after the concrete work has been poured. Masonry shall not serve as vertical concrete forms. Pour concrete first and then build masonry.

5.1.3 The built surfaces of all walls and piers shall be protected with boards at all times when work is not in progress and shall also be covered with canvas during stormy or damp weather or cold weather and in case of delay. Also, properly protect with boards, exposed corners and angles of face and other brick work during construction.

5.1.4 Build control joints where shown and as detailed. All such joints shall be completely free of mortar. If joints are not shown they shall be provided in compliance with the recommendations of NCMA.

5.1.5 No masonry or other units having a film of water or frost on their surface shall be laid in the walls. All masonry shall be laid plumb, true to line, with level and accurately spaced courses, and reveals, with corners plumb and true, and with each course breaking joint with the course below. Bond shall be kept plumb throughout.

5.1.6 Work required to be built in with the masonry, including anchors, wall plugs, and accessories, shall be built in as the erection progresses. Unless otherwise shown on the drawings or specified the space around built-in items shall be filled solidly with masonry. Chases and reglets shall be kept clean and free from mortar or other debris.

5.1.7 Masonry units shall be culled so that only perfect faces of the units shall be expressed.

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### 5.3 CONCRETE MASONRY UNITS:

5.3.1 Concrete masonry units shall be erected for interior facing and interior partitions where shown on the drawings. Each course shall be solidly bedded in mortar, with vertical mortar joints lined up in common bond. Vertical joints shall be buttered their entire length. Joints in exposed work shall be approximately 3/8" wide and be tooled slightly concave.

5.3.2 Each course shall be bonded at corners and intersections and shall be bonded into or anchored to adjacent construction with metal anchors. Where concrete masonry walls butt into concrete walls, provide dovetail slots continuous, in concrete wall and securely anchor masonry wall to same with metal ties spaced not over 16" o/c. vertically. All metal bucks set in concrete masonry unit work shall have back of bucks filled solid with mortar.

5.3.3 The face of the CMU in the air space cavities shall be parged or the mortar joints shall be full and tooled with a concave surface (bed and head, similar to the exposed face. In lieu of parging, fluid applied water proofing can be used.

5.4 CUTTING AND PATCHING: Cutting and patching of masonry required by the plans shall be performed by masonry mechanic.

5.5 UNFINISHED WORK: Unfinished work shall be stepped back for joining with new work; toothing may be resorted to only when specifically approved by the Architect. Before new work is started, all loose mortar shall be removed.

5.6 PROTECTION: Surfaces of masonry not being worked on shall be properly protected at all times during the construction operation. At such times as rain or snow is imminent and the work is discontinued, the tops of exposed masonry walls and similar surfaces shall be covered with a strong waterproof membrane well secured in place.

### 6. **WALL HEIGHTS**

This Contractor shall build-up masonry walls to the elevations indicated.

### 7. **BOND BEAM**

Lay-up and pour bond beams with four reinforcing bars as specified by the Structural Engineer. Bond beams shall extend the length of the walls. The bond beams shall be filled with concrete. Bond beams only occur where noted on the plans.

### 8. **MORTAR JOINTS**

All mortar joints shall be completely filled especially the head joints. Special care shall be taken to ensure head joints are filled completely. Cavities and expansion joints shall be kept clean and free of mortar and/or mortar drippings.

### 9. **TOOLING OF MORTAR JOINTS**

The tool shall be slightly larger than the masonry joint and shall be of concave profile struck to a weather tight joint.

9.1 Exposed joints inside and outside of the building shall be ironed smooth and concave. Tools for striking joints shall be not less than 3/4" in diameter. Use extreme care to not have wide head and bed joints. If necessary to avoid wide head joints, brick shall be cut. Any face brick cutting which is required must be done with a power saw.

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### **10. WALL FLASHING, WEEPS and VENTS**

- 10.1 Wall flashing shall be furnished and installed over all openings in exterior masonry walls at base of masonry walls, shelf angles and where shown on the Drawings. Flashing material shall be 26 Ga. galvanized steel, cut to size.
- 10.2 Flashing over openings shall be in one (1) piece and shall extend eight (8) inches beyond opening on each side. End dams shall be provided for all such conditions.
- 10.3 Where material must be spliced, the ends shall form a six (6) inch wide lap joint. Seal joints with butyl caulk.
- 10.4 Flashing shall be laid in mortar and covered with mortar. Through wall flashing above windows and door shall have the leading edge stand proud of the finished face of masonry 1/8".
- 10.5 FLASHING INSPECTION:  
Prior to covering up any through wall flashings the installation must be approved and noted by the architect or the architect's representative. Installations that are covered up prior to approval will be removed.

### **11. WALL CAP/COPINGS**

Wall caps and copings are specified elsewhere in the specifications and drawings.

### **12. CLEANING**

- 12.1 When masonry work is complete, proceed with cleaning and caulking. Remove excess mortar and stains using scrapers and brushes.
- 12.2 After walls have been completed and allowed to dry out a minimum of twenty-eight (28) days, clean exterior and interior brick surfaces with "Sure Klean" cleaning agent, as manufactured by Process Solvent Co., Inc.
- 12.3 Product to be determined by consulting cleaner manufacturer and the concrete block manufacturer.
- 12.4 Before cleaning agent is applied, thoroughly wet wall down with clear water.
- 12.5 Apply solution over no area greater than twenty (20) square feet, clean with a stiff fiber brush, then hose down with clean water immediately after cleaning, removing all traces of cleaning agent.
- 12.6 Protect all trim, windows or concrete against contact with the solution.

### **13. POINTING**

This contractor shall examine all exterior and interior masonry joints carefully, especially head joints, rake out all defective joints to a minimum depth of 3/4" removing all loose mortar, specified under Section 4100 - Mortar, of these specifications. Re-clean areas to remove excess mortar and streaks.

**End of Section 04200**