

## SECTION 04 20 00

### UNIT MASONRY

#### PART 1 GENERAL

##### 1.01 REFERENCES

- A. In the absence of other information, the methods and recommendations of the National Concrete Masonry Association (NCMA), Brick Institute of America (BIA), and Rocky Mountain Masonry Institute (RMMI) shall be followed.
- B. Design and detail control and expansion joints to meet, at least, the minimum guidelines of the BIA and NCMA.
- C. Refer to Section 09 91 00 for anti-graffiti coatings.
- D. Matching of existing brick, delivery time, and future availability often determine brick specification criteria.

#### PART 2 PRODUCTS

##### 2.01 BRICK MATERIALS

- A. Face brick:
  - 1. Grade SW, type FBS (ASTM C-216-87).
  - 2. Specify minimum of two brick manufacturers.
  - 3. Provide Type N mortar.
- B. Concrete masonry units:
  - 1. Hollow load-bearing concrete block, ASTM C90.
  - 2. Specify minimum of two concrete masonry unit manufacturers.
  - 3. Ends: Concave; bullnose at interior exposed corners.
  - 4. Special shapes
    - a) Provide special manufactured shapes of concrete masonry units including solid units, lintel blocks, bond beams, facing units, etc.
    - b) Sound absorbing acoustic units: NRC 65 minimum rating.
- C. Ties:
  - 1. Two-piece slotted or clip-and-loop only.
  - 2. Single-piece flat stock, corrugated, wire ties, and ferrous materials are prohibited.
- D. Horizontal joint reinforcement:
  - 1. Use ladder type joint reinforcement where vertical reinforcement is involved and truss type elsewhere.
- E. Accessories:
  - 1. Embedded flashings.
  - 2. Control joint materials.
  - 3. Expansion joint materials.
  - 4. Other masonry accessories per standard Section 04 05 16.

#### PART 3 EXECUTION

##### 3.01 INSTALLATION

- A. Mortar joints
  - 1. Lay units with full mortar beds on bed faces and minimum 85% coverage on head joints.

2. For units requiring grouting, apply mortar to webs also.
  3. Exposed-to-view mortar joints shall be tooled to a smooth, concave finish.
  4. Mortar joints not exposed to view in the finished construction shall be cut flush with masonry.
  5. Strike joints flush at surfaces scheduled to receive plaster.
- B. Rake back top of wall at end of workday. Tothing of subsequent masonry is not acceptable.
  - C. Protect top of masonry walls and veneers to prevent water infiltration, wicking, and efflorescence.
  - D. Cavities and spaces to contain reinforcement and grout:
    1. Aligned, continuous and unobstructed; no more than 10% mortar obstruction.
    2. 2" minimum clear in any dimension.
  - E. Water repellents are not allowed on masonry surfaces.
  - F. All interior unit masonry all outside corners shall be bullnosed.

### **3.02 REINFORCEMENT**

- A. Horizontal masonry joint reinforcement shall be placed so that longitudinal wires are located over face-shell mortar beds, and are fully embedded in mortar.
  1. Minimum mortar coverage: 5/8" to exterior face of wall; 1/2" all other locations.
  2. Lap reinforcement 6" minimum.
  3. Use factory-fabricated corner and intersection sections.
  4. Unless otherwise indicated, install horizontal reinforcement at 16" O.C. beginning with first course (8" above base of masonry).
- B. Continuity of horizontal reinforcing is required below fenestration (windows and other wall openings and penetrations).

### **3.03 GROUTING**

- A. Spaces around openings, frames and other built-in items shall be filled solid as each course is laid.
- B. Grout all cells which occur at corners, door and window jambs, changes in parapet or foundation elevations (both sides of step), control joints (both sides of joints), and cores with reinforcement.
- C. Slush fill hollow metal frames with grout at masonry and concrete walls.

### **3.04 CLEANING**

- A. Clean new masonry per RMMI recommendations, 1 week minimum, 2 weeks maximum, after placement.
- B. Cleaning solutions shall be water-based and approved by the masonry manufacturer.
- C. Muriatic acid solutions are prohibited.

### **3.05 TOLERANCES**

- A. Use ACI 531 tolerances.

### **3.06 FIELD QUALITY CONTROL**

- A. Contractor shall work with the Owner to schedule Owner's masonry inspections and testing.
- B. Refer to DPS Standard 04 05 16 for other masonry testing.
- C. Owner will provide masonry unit strength testing and inspection for Owner's information at Owner's expense. Prism testing may be performed if allowed on project-specific basis. A/E to specify locations and frequency of prism testing, if allowed.

- D. Contractor will be provided with Owner's testing information and may use test information as a part of Contractor's quality control. However, Owner does not represent that the frequency or type of testing is adequate to assure compliance with contract requirements. Contractor shall provide additional testing needed to assure contract compliance, at Contractor's expense.
- E. Additional tests or re-tests required for quality control shall be at Contractor's expense.
- F. Owner will provide required structural special inspections per ACI 530 and 530.1, IBC, or local building code, whichever is more stringent.

**END OF SECTION 04 20 00**