

## SECTION 04 26 13 - MASONRY VENEER

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Brick.
2. Mortar materials.
3. Ties and anchors.
4. Embedded flashing.
5. Accessories.
6. Mortar mixes.

B. Products Installed but not Furnished under This Section:

1. Cast-stone trim in masonry veneer.

#### 1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

#### 1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For the following:

1. Masonry Units: Indicate sizes, profiles, coursing.
2. Fabricated Flashing: Detail corner units and other special applications.

C. Samples for Initial Selection:

1. Clay face brick, in the form of straps of five or more bricks.
2. Weep/cavity vents.

D. Samples for Verification: For each type and color of the following:

1. Clay face brick, in the form of straps of five or more bricks.
2. Mortar. Make Samples using same sand and mortar ingredients to be used on Project.
3. Weep/cavity vents.
4. Cavity drainage material.
5. Accessories embedded in masonry.

#### 1.4 INFORMATIONAL SUBMITTALS

A. Qualification Statements: For testing agency.

B. Mix Designs: For each type of mortar. Include description of type and proportions of ingredients.

1. Include test reports for mortar mixes required to comply with property specification. Test in accordance with ASTM C109/C109M for compressive strength, ASTM C1506 for water retention, and ASTM C91/C91M for air content.

C. Cold-Weather and Hot-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with requirements.

#### 1.5 QUALITY ASSURANCE

A. Qualifications:

1. Testing Agency: Qualified in accordance with ASTM C1093 for testing indicated.

1.6 MOCKUPS

- A. Sample Panels: Build sample panels to verify selections made under Sample submittals and to demonstrate aesthetic effects. Comply with requirements in Section 01 40 00 "Quality Requirements" for mockups.
  - 1. Build sample panels for exposed unit masonry construction 48 inches48 inches high by full thickness.
  - 2. Build sample panels facing south.
  - 3. Clean one-half of exposed faces of panels with masonry cleaner indicated.
  - 4. Protect approved sample panels from the elements with weather-resistant membrane.
  - 5. Approval of sample panels is for color, texture, and blending of masonry units; relationship of mortar and sealant colors to masonry unit colors; tooling of joints; aesthetic qualities of workmanship; and other material and construction qualities.
    - a. Approval of sample panels does not constitute approval of deviations from the Contract Documents contained in sample panels unless such deviations are specifically approved in writing.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.
- B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- C. Store aggregates where grading and other required characteristics can be maintained, and contamination avoided.
- D. Deliver preblended, dry mortar mix in moisture-resistant containers. Store preblended, dry mortar mix in delivery containers on elevated platforms in a dry location or in covered weatherproof dispensing silos.
- E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.8 FIELD CONDITIONS

- A. Protection of Masonry: During construction, cover tops of veneer with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
  - 1. Extend cover a minimum of 24 inches down face of veneer and hold cover securely in place.
- B. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry. Immediately remove grout, mortar, and soil that come in contact with masonry.
  - 1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
  - 2. Protect sills, ledges, and projections from mortar droppings.
  - 3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
- C. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in TMS 602.

1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and higher and will remain so until masonry has dried, but not less than seven days after completing cleaning.
- D. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in TMS 602.

## PART 2 - PRODUCTS

### 2.1 SOURCE LIMITATIONS

- A. For exposed masonry units, obtain each color and grade from single source with resources to provide materials of consistent quality in appearance and physical properties.

### 2.2 UNIT MASONRY, GENERAL

- A. Masonry Standard: Comply with TMS 602.
- B. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated. Do not use units where such defects will be exposed in the completed Work.

### 2.3 BRICK

- A. General: Provide shapes indicated and as follows, with exposed surfaces matching finish and color of exposed faces of adjacent units.
  1. For ends of sills and caps and for similar applications that would otherwise expose unfinished brick surfaces, provide units without cores or frogs and with exposed surfaces finished.
- B. Clay Face Brick: Facing brick complying with ASTM C216, Grade SW, Type FBS.
  1. Manufacturers: Subject to compliance with requirements, provide products by the following or approved equal:
    - a. <https://www.glengery.com/>
    - b. Belden Brick Company (The).
    - c. Triangle Brick Company. <https://www.trianglebrick.com/>
  2. Initial Rate of Absorption: Less than 30 g/30 sq. in. per minute when tested in accordance with ASTM C67/C67M.
  3. Efflorescence: Provide brick that has been tested in accordance with ASTM C67/C67M and is rated "not effloresced."
  4. Size (Actual Dimensions): 3-5/8 inches wide by 2-1/4 inches high by 7-5/8 inches long.
  5. Application: Use where brick is exposed unless otherwise indicated.
  6. Color and Texture: TBD.

### 2.4 MORTAR MATERIALS

- A. Portland Cement-Lime Mix: Packaged blend of Portland cement and hydrated lime containing no other ingredients.
- B. Water: Potable.

### 2.5 TIES AND ANCHORS

- A. General: Ties and anchors extend at least 1-1/2 inches into veneer but with at least a 5/8-inch cover on outside face.
- B. Materials: Provide ties and anchors specified in this article that are made from materials that comply with the following unless otherwise indicated:

1. Hot-Dip Galvanized, Carbon-Steel Wire: ASTM A1064/A1064M, with ASTM A153/A153M, Class B-2 coating.

C. Adjustable Masonry-Veneer Anchors:

1. General: Provide anchors that allow vertical adjustment but resist a 100 lbf load in both tension and compression perpendicular to plane of wall without deforming or developing play in excess of 1/16 inch.
2. Masonry-Veneer Anchors; Double-Pintle Plate: Rib-stiffened, sheet metal anchor section with screw holes at top and bottom, projecting horizontal leg with slots for vertical legs of double pintle wire tie.
  - a. Manufacturers: Subject to compliance with requirements, provide products by the following:
    - 1) Hohmann & Barnard, Inc.
    - 2) Model: HB-213-2X

2.6 EMBEDDED FLASHING

A. Flexible Flashing: Use the following:

1. Copper Fabric Flashing: 5 oz./sq. ft. self-adhesive copper sheet bonded between two layers of glass-fiber cloth. Use only where flashing is fully concealed in masonry.
  - a. Manufacturers: Subject to compliance with requirements, provide products by the following:
    - 1) Hohmann & Barnard, Inc.
    - 2) Type: Copper SA

B. Termination Bars for Flexible Flashing: Use the following:

1. Type 304 stainless steel, 26-gauge steel bar with 3/8-inch flange at top for caulking.
  - a. Manufacturers: Subject to compliance with requirements, provide products by the following:
    - 1) Hohmann & Barnard, Inc.
    - 2) Type: T2.
    - 3) Option: T2-FTS (Foam-Tite Seal).

2.7 ACCESSORIES

A. Weep/Vent Products: Use the following unless otherwise indicated:

1. Cellular Plastic Weep/Vent: One-piece, flexible extrusion made from UV-resistant polypropylene copolymer, full height and width of head joint and depth 1/8 inch less than depth of outer wythe, in color selected from manufacturer's standard.
  - a. Manufacturers: Subject to compliance with requirements, provide products by the following:
    - 1) Hohmann & Barnard, Inc.
    - 2) Model: QV – Quadro-Vent.

B. Cavity Drainage Material: Free-draining mesh, made from polymer strands that will not degrade within the wall cavity.

1. Mortar Deflector: Strips, full depth of cavity and high, with dovetail-shaped notches that prevent clogging with mortar droppings.
  - a. Manufacturers: Subject to compliance with requirements, provide products by the following:
    - 1) Hohmann & Barnard, Inc.
    - 2) Model: Mortar Trap.

- C. Proprietary Acidic Masonry Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by the following:
    - a. Diedrich Technologies, Inc.; a Hohmann & Barnard company.

## 2.8 MORTAR MIXES

- A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.
  - 1. Do not use calcium chloride in mortar or grout.
  - 2. Use Portland cement-lime mortar.
  - 3. For exterior masonry, use Portland cement-lime mortar.
  - 4. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.
- B. Mortar for Unit Masonry: Comply with ASTM C270, Proportion Specification. Use Type N unless another type is indicated.
  - 1. For masonry below grade or in contact with earth, use Type M.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
  - 1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION, GENERAL

- A. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match the construction immediately adjacent to opening.
- B. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.
- C. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures. Mix units from several pallets or cubes as they are placed.
- D. Wetting of Brick: Wet brick before laying if initial rate of absorption exceeds 30 g/30 sq. in. per minute when tested in accordance with ASTM C67/C67M. Allow units to absorb water so they are damp but not wet at time of laying.

### 3.3 TOLERANCES

- A. Dimensions and Locations of Elements:
  - 1. For dimensions in cross section or elevation, do not vary by more than plus 1/2 inch or minus 1/4 inch.
  - 2. For location of elements in plan, do not vary from that indicated by more than plus or minus 1/2 inch.

3. For location of elements in elevation, do not vary from that indicated by more than plus or minus 1/4 inch in a story height or 1/2 inch total.

B. Lines and Levels:

1. For bed joints and top surfaces of bearing walls, do not vary from level by more than 1/4 inch in 10 ft., or 1/2-inch maximum.
2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 ft., 1/4 inch in 20 ft., or 1/2-inch maximum.
3. For vertical lines and surfaces, do not vary from plumb by more than 1/4 inch in 10 ft., 3/8 inch in 20 ft., or 1/2-inch maximum.
4. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 ft., 1/4 inch in 20 ft., or 1/2-inch maximum.
5. For lines and surfaces, do not vary from straight by more than 1/4 inch in 10 ft., 3/8 inch in 20 ft., or 1/2-inch maximum.
6. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 ft., or 1/2-inch maximum.
7. For faces of adjacent exposed masonry units, do not vary from flush alignment by more than 1/16 inch except due to warpage of masonry units within tolerances specified for warpage of units.

C. Joints:

1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch.
2. For exposed bed joints, do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch.
3. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch or minus 1/4 inch.
4. Do not vary from adjacent bed-joint and head-joint thicknesses by more than 1/8 inch.

3.4 LAYING MASONRY WALLS

- A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.
- B. Bond Pattern for Exposed Masonry: Lay exposed masonry in running bond; do not use units with less-than-nominal 4-inch horizontal face dimensions at corners or jambs.
- C. Stopping and Resuming Work: Stop work by stepping back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.
- D. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.

3.5 MORTAR BEDDING AND JOINTING

- A. Lay masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.
- B. Lay hollow brick with face shells fully bedded in mortar and with head joints of depth equal to bed joints. At starting course, fully bed entire units, including area under cells.
  1. At anchors and ties, fully bed units and fill cells with mortar as needed to fully embed anchors and ties in mortar.

- C. Set cast-stone trim units in full bed of mortar with full vertical joints.
  - 1. Clean soiled surfaces with fiber brush and soap powder and rinse thoroughly with clear water.
  - 2. Allow cleaned surfaces to dry before setting.
  - 3. Wet joint surfaces thoroughly before applying mortar.
  - 4. Rake out mortar joints for pointing with sealant.
- D. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.

### 3.6 ANCHORED MASONRY VENEERS

- A. Anchor masonry veneers to wall framing masonry-veneer anchors to comply with the following requirements:
  - 1. Fasten screw-attached through sheathing to wall framing with metal fasteners of type indicated. Use two fasteners unless anchor design only uses one fastener.
  - 2. Embed tie sections in masonry joints.
  - 3. Locate anchor sections to allow maximum vertical differential movement of ties up and down.
  - 4. Space anchors as indicated, but not more than 18 inches o.c. vertically and 24 inches o.c. horizontally, with not less than one anchor for each 2 sq. ft. of wall area. Install additional anchors within 12 inches of openings and at intervals, not exceeding 8 inches, around perimeter.
- B. Provide not less than 2 inches of airspace between back of masonry veneer and face of sheathing.
  - 1. Keep airspace clean of mortar droppings and other materials during construction. Bevel beds away from airspace, to minimize mortar protrusions into airspace. Do not attempt to trowel or remove mortar fins protruding into airspace.

### 3.7 EXPANSION JOINTS

- A. General: Install expansion-joint materials in unit masonry as masonry progresses. Do not allow materials to span expansion joints without provision to allow for in-plane wall or partition movement.
- B. Form expansion joints as follows:
  - 1. Form open joint full depth of brick wythe and of width of masonry joint for installation of sealant and backer rod.

### 3.8 FLASHING, WEEP HOLES, AND VENTS

- A. General: Install embedded flashing and weep holes in masonry at ledges, other obstructions to downward flow of water in wall, and where indicated. Install vents at obstructions to upward flow of air in cavities, and where indicated.
- B. Install flashing as follows unless otherwise indicated:
  - 1. Extend flashing through veneer, across airspace behind veneer, and up face of sheathing at least 8 inches; with upper edge tucked under weather-resistive barrier, lapping at least 4 inches. Fasten upper edge of flexible flashing to sheathing through termination bar. Seal top of termination bar with silicone caulking.
  - 2. Install metal drip edges beneath flexible flashing at exterior face of wall. Stop flexible flashing 1/2 inch back from outside face of wall and adhere flexible flashing to top of metal drip edge.
- C. Install weep holes in veneers in head joints of first course of masonry immediately above embedded flashing.

1. Use specified weep/cavity vent products to form weep holes.
2. Space weep holes 24 inches o.c.
- D. Place cavity drainage material in airspace behind veneers to comply with configuration requirements for cavity drainage material in "Accessories" Article.
- E. Install vents in head joints in exterior wythes at 24 inches o.c. Use specified weep/cavity vent products to form vents.

### 3.9 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections. Allow inspectors access to work areas as needed to perform tests and inspections. Retesting of materials that fail to comply with specified requirements will be at Contractor's expense.
- B. Inspections: Special inspections in accordance with Level 2 in TMS 402.
  1. Begin masonry construction only after inspectors have verified proportions of site-prepared mortar.
- C. Mortar Aggregate Ratio Test (Proportion Specification): For each mix provided, in accordance with ASTM C780.

### 3.10 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.
- B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.
- C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
- D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
  1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
  2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
  3. Protect adjacent stone and non masonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
  4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
  5. Clean brick by bucket-and-brush hand-cleaning method described in BIA Technical Notes 20.
  6. Clean masonry with a proprietary acidic cleaner applied according to manufacturer's written instructions.

### 3.11 MASONRY WASTE DISPOSAL

- A. Masonry Waste: Remove masonry waste and legally dispose of off Owner's property.

END OF SECTION 04 26 13