SECTION 04200
MASONRY (Site)

PART 1 – GENERAL

1.1 All materials and work shall conform to the Standard Specifications for Public Works Construction (SSPWC) latest edition, Sections 201 and 303, except as modified herein.

a. Scope:

Furnishing and installing concrete masonry units.

Protective measures for the prevention of damage to completed masonry and other work.

Removal of and disposal of surplus materials, debris, dirt, stains, etc., caused by the work, leaving the premises and all finished surfaces clean.

Setting and incorporating steel reinforcing into the masonry.

Setting and incorporating of steel inserts supplied by other trades.

b. Related Work Specified Elsewhere:

1. Footing Concrete: Section 03300.
2. Waterproofing: Section 07120.

PART 2 – PRODUCTS

2.1 Steel Reinforcement:

a. Steel reinforcement shall conform to Standard Specifications, Section 201-2.

2.2 Masonry Units:

a. Hollow masonry units shall be precision block that conform to Section 202-2.1.1 of the Standard Specifications, compressive strength as required by structural drawings.

b. Block dimensions shall be as indicated on plan and color shall be selected by County rep. All block shall be from same run. Cement, water, reinforcing steel shall conform to applicable sections of these specifications.

c. Mortar for masonry units shall conform to Section 202-2.1.2 of the Standard Specifications, and shall be colored to match the block.

d. Grout for masonry units shall conform to Section 202-2.1.2 of the Standard Specifications.

e. Samples. Submit samples of block to Agency Representative for approval.

PART 3 – EXECUTION

3.1 Masonry:

a. Construct a 4' x 4' sample panel for Agency Representative's approval.

b. Work shall conform to Section 303-4 of the Standard Specifications, except as modified

herein.

c. Masonry units shall be laid as reinforced filled cell hollow unit masonry. Block shall be laid in running bond with ½" full mortar bed on all face, shells, and on webs at cells to be filled. Vertical faces of head joints shall be buttered to a depth of 1 ½" minimum from each side and all joints shall be shoved tightly so that the mortar bonds well to both blocks. Furrowing of the mortar will not be permitted. All cells containing reinforcement shall be completely filled with grout or concrete using an aggregate consistent with the size of the cell. Where dowels do not occur in the same cells as the vertical wall reinforcement, grout cells at dowels to the same height as the dowels. Where block cutting is necessary, it shall be done with a motorized masonry saw. Refer to details to ascertain where smooth face blocks are required. (Where required on plans, grout all cells.)

3.2 Steel Reinforcement.

Keep all reinforcement ½" clear (minimum) of all surfaces to permit the grout to fully surround the reinforcement. See plans for placement of steel.

3.3 Joints.

Nearly as possible of uniform thickness, ½" thick horizontal joint at block, head joints may vary. All interior and exterior horizontal and vertical joints tooled with slightly concave profile.

3.4 Curing.

Keep masonry moist continuously for a minimum of 3 days after being laid.

3.5 Partial Blocks:

Saw cut all partial concrete blocks required for this construction.

3.6 Defective Workmanship and Materials:

All work which does not conform to the requirements of the specifications shall be deemed defective and shall be removed from the site, or shall be strengthened and/or replaced as directed by the Agency Representative.

3.7 Cleaning:

At the completion of masonry work, thoroughly clean all masonry walls and leave interior and exterior surfaces of walls free from mortar and other stains. Remove all scaffolding and equipment used in the work. Clean up all debris, refuse and surplus materials and remove them from the premises.

END OF SECTION - 04200

SECTION 04215

ADHERED BRICK VENEER

PART 1 - GENERAL

1.01 SUMMARY

A. Provide brick veneer where indicated on the Drawings, as specified herein, and as needed for a complete and proper installation.

B. Related work:
   1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.02 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.

B. Within 35 calendar days after the Contractor has received the Owner's Notice to Proceed, submit qualifications of the proposed subcontractor for review by the Architect.

C. Product Data: Submit for brick veneer units, accessories, and other manufactured products specified.

D. Samples: Submit four full-size samples of each brick unit specified to illustrate the full range of exposed color, texture and dimensions to be expected in the completed construction.
   1. Weep holes/vents in color to match mortar color.
   2. Accessories embedded in the masonry.

E. Material Test Reports: Signed by manufacturers certifying that each of the following items complies with requirements:
   1. Each type of masonry unit required.
      a. Include size-variation data for brick, verifying that actual range of sizes falls within specified tolerances.
   2. Each cement product required for mortar, including name of manufacturer, brand, type, and weight slips at time of delivery.
   3. Each material and grade indicated for reinforcing bars.
   4. Each type and size of joint reinforcement.
   5. Each type and size of anchor, tie, and metal accessory.

F. Manufacturer's Certificate: Submit data showing that brick products meet or exceed specified requirements.

G. Manufacturer's Installation Instructions: Indicate surface cleaning instructions.

1.03 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Use a subcontractor having not less than five years successful experience in installation of thin brick veneer, as approved by the Architect.

C. Source Limitations for Masonry Units: Obtain exposed masonry units for a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, through one source from a single manufacturer for each product required.

D. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from one manufacturer for each cementitious component and from once source of producer for each aggregate.

E. Sample panel:
   1. Prior to other work of this Section, prepare a 4' x 4' sample panel of the work of this Section at a location on the structure where approved by the Architect.
   2 Show methods of bedding, grouting, cleaning, and other aspects of the work of this Section to the quality specified.
   3. Make necessary adjustments in the sample panels and secure the Architect's approval.
   4. The sample panel, when approved by the Architect, will be used as datum points for comparison with the remainder of the installation of the work of this Section for the purpose of acceptance or rejection.
   5. Upon approval of the Architect, the sample panel may be actual portions of the finished work of this Section.

1.04 PRE-INSTALLATION CONFERENCE

A. Convene two weeks prior to commencing work of this section. Conference shall be attended by contractor, Owner, Architect, masonry subcontractor and his foreman, plumbing and electrical subcontractors, stucco subcontractor, and a representative of masonry material manufacturer.

B. Agenda shall include, but not be limited to the following:
   1. Review of substrate installation for corrections required prior to installation of brick veneer.
   2. Review of preparation and installation procedures.
   3. Flashing details including conflicts with manufacturer´s specification.
   4. Coordination of flashing details at storefront windows and juncture with front parapet.
   5. Code conflicts with UL requirements.
   6. Establishment of trade related job schedules.
   7. Establishment of schedules and work methods which will prevent damage to installed veneer.
   8. Coordination of penetrations for electrical stubs to be in place prior to roof installation.
   9. Designation of area on job site to be used as work and storage location.
   10. Establishment of weather and working conditions to which all parties agree.
   11. Other business relating to Work.

C. Where changes to any previously agreed upon conditions are desired, the party requesting the change shall give written notice regarding the desired change to all involved parties. Make such requests through the Contractor to the Architect.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Comply with pertinent provisions of Section 01600.

B. 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.

C. Deliver preblended, dry mortar mix in moisture-resistant containers designed for lifting and emptying into dispensing silo. Store preblended, dry mortar mix in delivery containers on elevated platforms, under cover, and in a dry location or in a metal dispensing silo with weatherproof cover.

1.06 WARRANTY

A. Manufacturer's standard warranty coverage against defects in materials when installed in accordance with the manufacturer's installation instructions.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Brick Veneer Units.
1. Manufacturer
a. Basis-of-Design Product: The design for the brick veneer systems is based on the manufacturer identified below. Subject to compliance with requirements, provide the named product or a comparable product by one of the following:
1. Basis-of-Design: H.C. Muddox, Interstate Brick; adhered veneer system.
2. Pacific Clay Products, Inc.
3. Higgins Brick Company.

2. General: Provide shapes indicated and as follows for each form of brick veneer required:
a. Provide units without cores or frogs and with exposed surfaces finished for ends of sills and caps and for similar applications that would otherwise expose unfinished brick surfaces.
3. Provide special shapes for applications requiring brick of size, form, color, and texture on exposed surfaces that cannot be produced by sawing.
4. Brick Veneer: ANSI/ASTM C1088, Type TBS, Grade Exterior.
a. Efflorescence: Provide brick that has been tested according to ASTM C67 and is rated "Non Effloresced".
b. Surface Coloring: Brick with surface coloring, other than flashed or sand-finished brick, shall withstand 50 cycles of freezing and thawing per ASTM C67 with no observable difference in the applied finish when viewed from 10 feet (3m).
5. Size: Manufactured to the following actual dimensions:
a. Thin Veneer Cut: 1/2-inch (12.7 mm) wide by 2-1/4 inches (108.7 mm) high by 7-1/2 inches (192 mm) long.
b. Color and Texture: As indicated in color schedule on Drawings.
6. Products of equal quality in all respects shall be considered as noted in Section 01600.

B. Substrates: Installation of brick veneer occurs at the following location.
   1. Steel Stud Wall with Exterior Sheathing.
      a. Provide underlayment with metal lath per Section 09200, Part 2.01.A;
      b. Provide scratch and brown coat of plaster per Section 09200, Part 3.02.
   2. Wood stud wall with exterior sheathing.
      a. Provide underlayment with metal lath per Section 09200, Part 2.01.A,
      b. Provide scratch and brown coat of plaster per Section 09200, Part 3.02.

C. Mortar Materials.
   1. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated or directed by mortar manufacturer.
   2. Mortar for Unit Masonry: Laticrete 272 Premium Floor N' Wall Thin Set Mortar.
   3. Mortar Additive for Thin-Set Mortar: Laticrete 3701 Mortar Admix.
      a. Shear Bond Requirement: 50 psi minimum.
   4. Water: Potable.
   5. Calcium Chloride: Not allowed

2.02 OTHER MATERIALS

A. Weep Screed: Equivalent to Superior SWS100-312, minimum 26 gage thick; depth governed by plaster thickness, "V" shaped, of longest possible lengths; galvanized finish.

B. Anchorages: Nails, staples, or other approved metal supports, of type and size to suit application, galvanized to rigidly secure lath and associated metal accessories in place.

C. Powder Activated Fastener: 0.145 inch diameter SDM flat head nail with washer as manufactured by Hilti, Inc. ICBO Deport No. 2388.

D. Penetration Flashing: Type 1, Grade A building paper conforming to CBC Standard 14-1, 9 inch wide x length required.

E. Masonry Cleaners.
   1. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar 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.
      a. Available Manufacturers:
         1. Diedrich Technologies, Inc.
         2. EaCo Chem, Inc.
         3. ProSoCo, Inc.

F. Joint Sealant: Latti Sil by Latticrete.

G. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates upon which work will be installed.

B. Coordinate with responsible entity to perform corrective work on unsatisfactory substrates.

C. Before installation, examine rough-in and built-in construction to verify actual locations of piping connections.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Protection: Protect adjacent work from contact with mortar.

B. Surface preparation: Prepare substrate in accordance with manufacturer's installation instructions for the type of substrate being covered.

3.03 INSTALLATION

A. Installation – Lathing Materials
1. On vertical surfaces apply two plies of underlayment over substrate; weather lap horizontal edges 4 inches, vertical edges 6 inches. Fasten in place.
2. Install penetration flashing around all openings and penetrations in exterior walls, soffits, and ceilings in compliance with CBC, including sealant and in conformance with recommendations contained in Plaster and Lathing Systems Manual and ML/SFA 920.
3. Place weep screed at base of applications of foundation line not less than 4 inches above earth or 2 inches above paved surfaces. Underlayment and lath shall cover and terminate on the attachment flange of the screed.
4. Install accessories to lines and levels.

B. Installation – Setting Bed
1. Apply setting bed scratch and brown coat over substrate, per Section 09200, to the thickness indicated on the drawings.
2. Allow scratch coat to cure for 48 hours.
3. Shall be designed to a bond strength with a working shear of 50 PSI.

C. Laying Masonry Walls
1. 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.
2. Bond Pattern for Exposed Masonry: Lay exposed masonry in bond pattern indicated on Drawings; do not use units with less than nominal 4-inch (100 mm) horizontal face dimensions at corners or jambs.

3. Establish lines, levels, and coursing indicated. Protect from displacement.
4. Maintain masonry courses to uniform dimensions. Form vertical and horizontal joints of uniform thickness.
5. Form concave mortar joints.
6. Stopping and resuming work: In each course, rack back one-half unit length for one-half running bond; do not tooth. Clean exposed surfaces of set masonry, wet clay masonry units lightly if required, and remove loose masonry units and mortar before laying fresh masonry.

D. Placing and Bonding

1. Built-in Work: As construction progresses, build in items specified under this and other Sections of the Specifications. Fill in solidly with masonry around built-in items.
2. Interlock intersections and external corners.
3. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
4. Perform jobsite cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
5. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than the joint thickness, unless otherwise indicated.

E. Veneer Flashings
1. Extend flashings under tile veneer, turn up minimum 8 inches and weather lap with building paper.
2. Install flashing at all windowsills, exterior door and window heads, and above shelf angles.
3. Form flashing up into pan at jamb of windowsills and at jamb of window and door heads.
4. Lap end joints minimum 6 inches and seal watertight.
5. Use flashing manufacturer's recommended adhesive and sealer.

E. Tolerances
1. Maximum Variation From Unit to Adjacent Unit: 1/32 inch.
2. Maximum Variation From Plan of Wall: 1/4 inch in 10 feet (6 mm/3m) and 1/2 inch in 20 feet (13 mm/6m) or more.
3. Maximum Variation From Plumb: 1/4 inch (6 mm) per story non-cumulative; 1/2 inch (13 mm) in two stories or more.
4. Maximum Variation From Level Coursing: 1/8 inch in 3 fee (3mm/m) and 1/4 inch in 10 feet (6 mm/3m); 1/2 inch in 30 feet (13 mm/9.1 m).
5. Maximum Variation of Joint Thickness: 1/8 inch in 3 feet (3 mm/m).

F. Cutting and Fitting
1. Cut and fit for conduit, sleeves, and other mechanical and electrical items of work. Coordinate work to provide correct size, shape, and location.
2. Obtain Architect/Engineer approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.04 FIELD QUALITY CONTROL

A. Manufacturer's Field Services: Manufacturer's field representative shall make periodic site visits for installation consultation and inspection as requested by Owner.

3.05 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.

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 and mortar smears by hand with wooden paddles and nonmetallic scrape hoes or chisels.
   2. Replace defective mortar. Match adjacent work.
   3. 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.
   4. Protect adjacent coated foam shapes and non-masonry surfaces from contact with cleaner by covering them with liquid strippable masking agent, polyethylene film, or waterproof masking tape.
   5. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing the surfaces thoroughly with clear water.
   6. Clean brick by the bucket-and-brush hand-cleaning method described in BIA Technical Notes No. 20, using manufacturer's recommended detergent solution.

3.06 PROTECTION OF FINISHED WORK

A. Without damaging completed work, provide protective boards at exposed external corners which may be damaged by construction activities.

END OF SECTION - 04215