

SECTION 04700 MANUFACTURED MASONRY VENEER

GENERAL

SUMMARY

Section Includes: Manufactured stone veneer, Manufactured stone trim, and application materials.

Related Sections: Division 05, or 06 Section specifying weather resistant barrier over framed walls. Division 07 Section specifying flashing materials. Division 09 Section specifying portland cement plastering.

SUBMITTALS

Reference Section 01 33 00-Submittal Procedures; submit following items: Product Data: Manufactured masonry and application materials including mortar color charts, and weather resistant barrier.

Quality Assurance/Control Submittals: Qualifications: Proof of installer qualifications. Manufacturer's Installation Instructions.

Closeout Submittals: Reference Section 01 78 00-Closeout Submittals; submit following items: Maintenance Instructions. Special Warranties.

QUALITY ASSURANCE

Qualifications: Manufacturer Qualifications: Minimum five years experience in producing manufactured masonry. Member of following organizations: ACL, ASTM. Installer Qualifications: Company with documented experience in installation of manufactured masonry including minimum 5 projects within 400 mile radius of this Project.

Certifications: Florida Product Approval Number.

Field Samples: Provide in a location selected by Architect showing representative sample of installed product including penetration and termination details, corner detail, waterable/sill, and mortar color and tooling for approval.

DELIVERY, STORAGE, AND HANDLING

Follow manufacturer's instructions.

PROJECT/SITE CONDITIONS

Environmental Requirements: Maintain materials and ambient temperature in area of installation at minimum 40 degrees F (4 degrees C) prior to, during, and for 48 hours following installation.

WARRANTY

Special Warranty: Provide manufacturer's standard limited warranty against defects in manufacturing for a period of 50 years following date of Substantial Completion.

MAINTENANCE

Extra Materials: Furnish extra manufactured stone material in a variety of shapes and sizes in quantity equal to three percent of the installed stone.

PRODUCTS

MANUFACTURER

Owens Corning Tel: (800) 255-1727 Fax: (866) 213-3037 Website: www.culturedstone.com

Substitutions: None permitted.

Cultured Stone® Textures: Drystack Pattern, Rustic Southern LedgeStone-Carmel CSV-2007

Architectural Trim: Waterable/Sill—Stone Textured: Color: Carmel CSV-2007 Size: 2 (front), 2-1/2 (back), by 3 by 18 inches Provide sloped top surface and drip edge.

Manufactured Masonry Physical Properties: Compressive Strength: ASTM C 192 and ASTM C39, 1800 psi, 5 specimen average, 1500 psi minimum for individual unit. Bond Between Stone Unit, Type S Mortar, and Backing: ASTM C 482, 50 psi. Thermal Resistance: ASTM C 177, R-factor, 0.355 per inch of thickness. Freeze/Thaw: ASTM C 67, no disintegration and less than 3 percent weight loss. Fire Hazard Test: UL 723. Flame spread: 0. Smoke Development: 0. Maximum Veneer Unit Weight: 15 psf

RELATED MATERIALS

Weather Resistant Barrier: [Kraft waterproof building paper, UBC Standard No. 14-1] [No. 15, Type I, asphalt saturated felt, ASTM D 226].

Metal Lath: 2.5 lb galvanized expanded metal lath

Fasteners: Into Metal Studs: Minimum 7/16 inch head diameter, corrosion-resistant, self-drilling, self tapping, pancake head screws of sufficient length to penetrate 3/8 inch minimum into the stud.

Mortar: Premixed Type N or mortar mixed using components and proportions following manufactured masonry manufacturer's installation instructions. Comply with ASTM C 270.

EXECUTION

EXAMINATION

Examine substrates upon which manufactured masonry will be installed.

Coordinate with responsible entity to correct unsatisfactory conditions.

Commencement of work by installer is acceptance of substrate conditions.

PREPARATION

Protection: Prevent work from occurring on the opposite of walls to which manufactured masonry is applied during and for 48 hours following installation of the manufactured masonry.

Surface Preparation: Follow manufacturer's instructions designated below for the appropriate type of manufactured masonry and substrate.

INSTALLATION

Install Cultured Stone® products in accordance with manufacturer's Cultured Stone® installation instructions using mortar-less joints.

Install/Apply Related Materials specified above in accordance with type of substrate and manufactured masonry manufacturer's installation instructions.

CLEANING

Reference Section 01 74 00-Cleaning and Waste Management.

Clean manufactured masonry in accordance with manufacturer's installation instructions.

PROTECTION

Protect finished work from rain during and for 48 hours following installation.

Protect finished work from damage during remainder of construction period.

END OF SECTION

SECTION 04810 - UNIT MASONRY ASSEMBLIES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes unit masonry assemblies consisting of the following: 1. Concrete masonry units.

1.2 SUBMITTALS

A. Product Data: For each masonry unit, accessory, and other manufactured product indicated.

B. Samples: Showing the full range of colors and textures available for exposed masonry units and colored mortars.

C. Material Test Reports: For each type of masonry unit, mortar, and grout required.

1.3 PROJECT CONDITIONS

A. Cold-Weather Requirements: Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements in ACI 530.1.

B. Hot-Weather Requirements: When ambient temperature exceeds 100 deg F, or 90 deg F with a wind velocity greater than 8 mph, do not spread mortar beds more than 48 inches ahead of masonry. Set masonry units within one minute of spreading mortar.

PART 2 - PRODUCTS

2.1 COLORS AND TEXTURES

A. Exposed Masonry Units: As selected from manufacturer's full range.

2.2 MASONRY UNITS

A. Concrete Masonry Units: ASTM C 90. 1. Unit Compressive Strength: 1900-psi minimum, average net-area compressive strength. 2. Weight Classification: Normal weight. 3. Type: II, nonmoisture-controlled units. 4. Exposed Faces of Decorative Units: Normal-weight aggregate, split-face finish. 5. Special Shapes: Provide for lintels, corners, jambs, sash, control joints, headers, bonding, and other special conditions.

2.3 MORTAR AND GROUT MATERIALS

A. Portland Cement: ASTM C 150, Type I, except Type III may be used for cold-weather construction.

B. Hydrated Lime: ASTM C 207, Type S.

C. Mortar Cement: ASTM C 1329.

1. Products: a. Blue Circle Cement, Magnolia Superbond Mortar Cement. b. Lafarge Corporation; Lafarge Mortar Cement.

D. Masonry Cement: ASTM C 91.

E. Pigmented Mortar: Colored cement or cement-lime formulation as required to produce the color indicated.

1. Colored Masonry Cement:

a. Products: 1) Blue Circle Cement; Magnolia Masonry Cement. 2) Essroc Materials, Inc.; Brixment-in-Color. 3) Holnam, Inc.; Rainbow Mortamix Custom Color Masonry Cement.

F. Aggregate for Mortar: ASTM C 144, except for joints less than 1/4 inch thick, use aggregate graded with 100 percent passing the No. 16 sieve.

G. Aggregate for Grout: ASTM C 404.

H. Water: Potable.

2.4 REINFORCING

A. Uncoated Steel Reinforcing Bars: ASTM A 615/A 615M; ASTM A 616/A 616M, including Supplement 1; or ASTM A 617/A 617M, Grade 60.

B. Masonry Joint Reinforcement: ASTM A 951; mill galvanized, carbon-steel wire for interior walls and hot-dip galvanized, carbon-steel wire for exterior walls. 1. Single-Wythe Masonry: Use either ladder or truss type with single pair of side rods and cross rods spaced not more than 16 inches o.c.

C. Adjustable Anchors for Connecting to Steel Frame: Two-piece assemblies that allow vertical or horizontal adjustment but resist tension and compression forces perpendicular to wall. 1. Anchor Section: Crimped 1/4-inch diameter, galvanized steel wire anchor section for welding to steel. 2. Tie Section: Triangular-shaped wire tie, sized to extend within 1 inch of masonry face, made from 0.1875-inch diameter, galvanized steel wire.

D. Anchors for Connecting to Concrete: Provide two-piece assemblies that allow vertical or horizontal adjustment but resist tension and compression forces perpendicular to wall. 1. Anchor Section: Dovetail anchor section formed from 0.0528-inch-thick, galvanized steel sheet. 2. Tie Section: Triangular-shaped wire tie, sized to extend within 1 inch of masonry face, made from 0.1875-inch diameter, galvanized steel wire.

2.5 MISCELLANEOUS MASONRY ACCESSORIES

A. Compressible Filler: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent, formulated from neoprene.

B. Preformed Control-Joint Gaskets: Designed to fit standard sash block and to maintain lateral stability in masonry wall. Made from styrene-butadiene-rubber compound complying with ASTM D 2000, Designation M2AA-805.

C. Bond-Breaker Strips: Asphalt-saturated, organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).

2.6 MASONRY CLEANERS

A. Job-Mixed Detergent Solution: Solution of 1/2-cup dry measure tetrasodium polyphosphate and 1/2-cup dry measure laundry detergent dissolved in 1 gal. of water.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Cut masonry units with motor-driven saws. Allow units cut with water-cooled saws to dry before placing, unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

B. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures.

C. Comply with tolerances in ACI 530.1/ASCE 6/TMS 602 and the following: 1. For conspicuous vertical and horizontal lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/4 inch in 20 feet, nor 1/2 inch maximum.

3.2 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 bond pattern indicated; do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.

C. Fill cores in hollow concrete masonry units with grout 24 inches under bearing plates, beams, lintels, posts, and similar items, unless otherwise indicated.

3.3 MORTAR BEDDING AND JOINTING

A. Lay hollow masonry units as follows: 1. With full mortar coverage on horizontal and vertical face shells. 2. Bed webs in mortar in starting course on footings and in all courses of piers, columns, and pilasters, and where adjacent to cells or cavities to be filled with grout. 3. For starting course on footings where cells are not grouted, spread out full mortar bed, including areas under cells.

B. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than the joint thickness, unless otherwise indicated.

3.4 MASONRY JOINT REINFORCEMENT

A. Provide continuous masonry joint reinforcement as indicated. Install with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcement a minimum of 6 inches.

B. Provide continuity at corners and wall intersections by using prefabricated "L" and "T" sections.

3.5 ANCHORING MASONRY

A. Anchor masonry to structural members where masonry abuts or faces structural members to comply with the following: 1. Provide an open space not less than 1 inch in width between masonry and structural member, unless otherwise indicated. 2. Anchor masonry to structural members with flexible anchors embedded in masonry joints and attached to structure.

3.6 LINTELS

A. Provide masonry lintels where shown. Provide precast lintels made from concrete matching concrete masonry units in color, texture, and compressive strength and with reinforcing bars indicated or required to support loads indicated.

3.7 FIELD QUALITY CONTROL

A. Owner will engage a qualified independent testing agency to perform field quality-control testing indicated below. 1. Testing Frequency: Tests and Evaluations listed in these subparagraphs will be performed during construction for each 5000 sq. ft. of wall area or portion thereof. 2. Mortar: Properties will be tested per ASTM C 780. 3. Grout: Sampled and tested for compressive strength per ASTM C 1019.

3.8 PARGING

A. Parge predampened masonry walls, where indicated, with Type S or Type N mortar applied in 2 uniform coats to a total thickness of 3/4 inch with a steel-trowel finish. Form a wash at top of parging and a cove at bottom. Damp-cure parging for at least 24 hours.

3.9 CLEANING

A. Clean unit masonry by dry brushing to remove mortar fins and smears before tooling joints, as work progresses.

END OF SECTION 04810

SECTION 05120 - STRUCTURAL STEEL

REFER TO STRUCTURAL PLANS

END OF SECTION 05120

SECTION 05210 - STEEL JOISTS

REFER TO STRUCTURAL PLANS

END OF SECTION 05210

SECTION 05310 - STEEL DECK

REFER TO STRUCTURAL PLANS

END OF SECTION 05310

SECTION 05400 - COLD-FORMED METAL FRAMING

REFER TO STRUCTURAL PLANS

END OF SECTION 05400

SECTION 05500 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following: 1. Steel ladders. 2. Miscellaneous steel framing and supports. 3. Pipe bollards.

1.2 SUBMITTALS

A. Shop Drawings: Include plans, elevations, sections, details of installation, and attachments to other Work.

B. Templates: For anchor bolts.

PART 2 - PRODUCTS

2.1 METALS

A. Metal Surfaces, General: Provide materials with smooth, flat surfaces without blemishes.

B. Ferrous Metals: 1. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M. 2. Stainless-Steel Bars and Shapes: ASTM A 276, Type 304. 3. Rolled-Steel Floor Plate: ASTM A 786/A 786M, rolled from plate complying with ASTM A 36/A 36M or ASTM A 283/A 283M, Grade C or D. 4. Rolled-Stainless-Steel Floor Plate: ASTM A 793. 5. Steel Tubing: Cold-formed steel tubing complying with ASTM A 500. 6. Steel Pipe: ASTM A 53, standard weight (Schedule 40), unless another weight is indicated or required by structural loads. 7. Slotted Channel Framing: Cold-formed metal channels 1.5-58 by 1.5-58 inches with flange edges returned toward web and with 9/16-inch wide slotted holes in webs at 2 inches o.c. Channels made from galvanized steel complying with ASTM A 653/A 653M, structural quality, Grade 33, with G90 coating; 0.079-inch nominal thickness. 8. Extrusions: ASTM B 221, alloy 6063-T6.

2.2 PAINT

A. Shop Primer for Ferrous Metal: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with performance requirements in FS TP-664 and compatible with finish paint systems indicated.

2.3 FABRICATION

A. Connections, General: Use connections that maintain structural value of joined pieces. 1. Shear and punch metals cleanly and accurately. Remove burrs. 2. Weld corners and seams continuously. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals. Obtain fusion without undercut or overlap. Remove welding flux immediately. Finish exposed welds smooth and blended. 3. Fabricate joints that will be exposed to weather in a manner to exclude water, or provide weep holes. 4. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Locate joints where least conspicuous.

B. Steel Ladders: Comply with ANSI A14.3, unless otherwise indicated. 1. Siderails: Continuous, 1/2-by-2-1/2-inch steel flat bars, with eased edges, spaced 18 inches apart. 2. Bar Rungs: 3/4-inch-diameter steel bars, spaced 12 inches o.c.

a. Fit rungs in centerline of side rails; plug-weld and grind smooth on outer rail faces. 4. Support each ladder at top and bottom and not more than 60 inches o.c. with welded or bolted steel brackets. Size brackets to support design loads specified in ANSI A14.3. 5. Fabricate ladder safety cages to comply with ANSI A14.3. Assemble by welding or riveting. 6. Galvanize exterior ladders and safety cages.

C. Miscellaneous Framing and Supports: Fabricate steel framing and supports that are not a part of structural-steel framework as necessary to complete the Work from structural steel of welded construction. Cut, drill, and tap units to receive hardware, hangers, and similar items.

1. Where indicated to be cast into concrete or built into masonry, equip with integrally welded anchors at 24 inches o.c. 2. Fabricate steel girders for wood frame construction from continuous steel shapes. Where wood nailers are attached to girders with bolts or lag screws, drill holes at 24 inches o.c. 3. Fabricate steel pipe columns for supporting wood frame construction with steel baseplates and top plates welded to pipe with fillet welds the same size as pipe wall thickness.

D. Pipe Bollards: Fabricate from Schedule 40 steel pipe.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Provide anchorage devices and fasteners for securing metal fabrications to in-place construction. Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, with edges and surfaces level, plumb, and true.

1. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction. 2. Fit exposed connections accurately together. Weld connections, unless otherwise indicated. Do not weld, cut, or abrade galvanized surfaces.

B. Set bearing and leveling plates on cleaned surfaces using wedges, shims, or leveling nuts. After bearing members have been positioned and plumbed, tighten anchor bolts and pack with nonshrink, nonmetallic grout.

END OF SECTION 05500

SECTION 06100 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following: 1. Wood blocking. 2. Wood nailers. 3. Wood sheathing. 4. Plywood backing panels.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of lumber grading agencies certified by the American Lumber Standards Committee Board of Review. 1. Factory mark each piece of lumber with grade stamp of grading agency. 2. For exposed lumber indicated to receive stained or natural finish, mark grade stamp on end or back of each piece. 3. Provide dressed lumber, S4S, unless otherwise indicated. 4. Provide dry lumber with 15 percent maximum moisture content at time of dressing for 2-inch nominal thickness or less, unless otherwise indicated.

B. Wood Structural Panels: 1. Plywood: DOC PS 1. 2. Oriented Strand Board: DOC PS 2.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

A. Preservative Treatment by Pressure Process: AWPA C2 (lumber) and AWPA C9 (plywood), except that lumber that is not in contact with the ground and is continuously protected from liquid water may be treated according to AWPA C31 with inorganic boron (SBX).

B. Application: Treat items indicated on Drawings, and the following:

1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing. 2. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete. 3. Wood framing members less than 18 inches above grade. 4. Wood floor plates that are installed over concrete slabs directly in contact with earth.

2.3 FIRE-RETARDANT-TREATED MATERIALS

A. General: Where fire-retardant-treated materials are indicated, provide materials that comply with performance requirements in AWPA C20 (lumber) and AWPA C27 (plywood). Identify fire-retardant-treated wood with appropriate classification marking of UL, U.S. Testing, Timber Products Inspection, or another testing and inspecting agency acceptable to authorities having jurisdiction. 1. Use treatment for which chemical manufacturer publishes physical properties of treated wood after exposure to elevated temperatures, when tested by a qualified independent testing agency according to ASTM D 5664, for lumber and ASTM D 5516, for plywood. 2. Use treatment that does not promote corrosion of metal fasteners. 3. Use exterior type for exterior locations and where indicated. 4. Use Interior Type A High Temperature (HT), unless otherwise indicated.

2.4 DIMENSION LUMBER

A. General: Of grades indicated according to the American Lumber Standards Committee National Grading Rule provisions of the grading agency indicated.

B. Non-Load-Bearing Interior Partitions: Construction, Stud, or No. 2 grade and any of the following species: 1. Mixed southern pine; SPIB. 2. Eastern softwoods; NELMA.

C. Exposed Framing: Hand select material for uniformity of appearance and freedom from characteristics that would impair finish appearance. 1. Species and Grade: As indicated above for load-bearing construction of same type. 2. Species and Grade: Hem-fir or Hem-fir (north), Select Structural grade; NLGA, WCLIB, or WWPA. 3. Species and Grade: Southern pine, Select Structural No. 1 grade; SPIB. 4. Species and Grade: Spruce-pine-fir or Spruce-pine-fir (south), Select Structural No. 1 grade; NELMA, NLGA, WCLIB, or WWPA.

2.5 SHEATHING

A. Plywood Wall Sheathing: Exterior, Structural I sheathing.

B. Paper-Surfaced Gypsum Wall Sheathing: ASTM C 79/C 79M, with water-resistant material incorporated into core and with water-repellent paper bonded to core's face, back, and long edges.

1. Manufacturers: a. American Gypsum Co. b. G-P Gypsum Corporation. c. National Gypsum Company. d. United States Gypsum Co. 2. Type and Thickness: Regular, 1/2 inch and Type X, 5/8 inch thick as indicated on drawings.

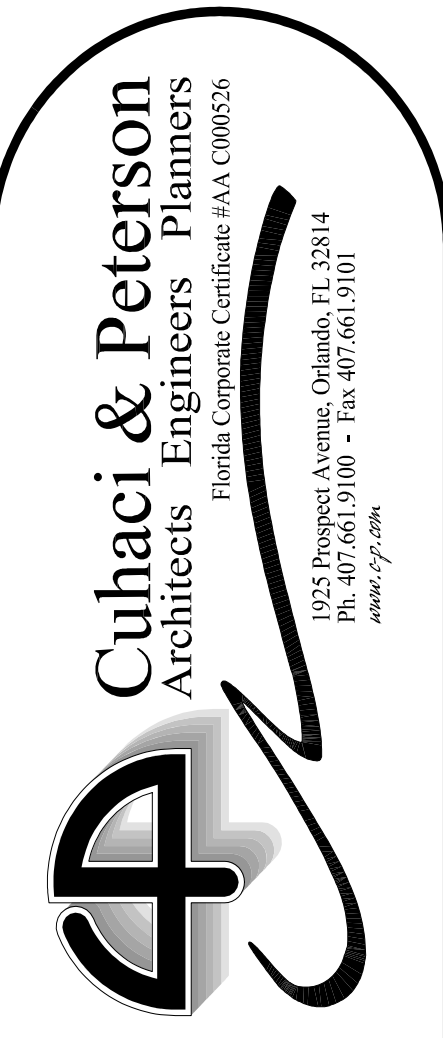
C. Glass-Mat Gypsum Wall Sheathing: ASTM C 1177/C 1177M. 1. Product: Subject to compliance with requirements, provide "Dens-Glass Gold" by G-P Gypsum Corp. 2. Type and Thickness: Regular, 1/2 inch and Type X, 5/8 inch thick as indicated on drawings.

D. Extruded-Polystyrene-Foam Wall Sheathing: ASTM C 578, Type IV, in manufacturer's standard lengths and widths with tongue-and-groove or ship/lap long edges as standard with manufacturer. 1. Manufacturers: a. DiversiFoam Products. b. Dow Chemical Company (The). c. Owens Corning. d. Tenneco Building Products.

E. Plywood Roof Sheathing: F.R. Exterior sheathing.

2.6 PLYWOOD BACKING PANELS

A. Telephone and Electrical Equipment Backing Panels: DOC PS 1, Exposure 1, C-D Plugged, fire-retardant



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PROJECT NAME: Orlando Gateway Center-Building # 4 SR 526 & SR 436 Orlando, Florida SHEET TITLE: Specifications

DESIGNER: STEVEN A. BLEWIS EIT, APR0350

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