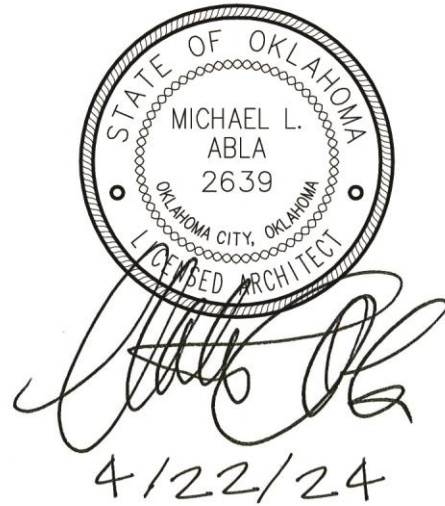


**MOORE PUBLIC SCHOOLS -
SANTA FE ELEMENTARY
SECURITY UPGRADES**

Moore Public Schools - Moore, Oklahoma
AGP - Moore, Oklahoma

ADDENDUM NO. 2

April 22, 2024



This addendum is applicable to work designated herein, shall be understood to be an Addendum, and as such shall be included in the Contract Agreement.

Receipt of this Addendum shall be acknowledged by the Construction Management Firm notifying this office in writing, and by any applicable subcontractor to the CM.

This addendum consists of one (1) page with attachments of ten (10) 8.5"x11" pages and zero (0) 24"x36" sheets.

A. Drawings:

Civil, Structural, Architectural, Mechanical, Electrical, Plumbing, and Technology

No changes.

B. Specifications:

1. Section 04810 – Unit Masonry Assemblies: replace section in its entirety with attached revised section.
2. Brick masonry color to match office addition – Kansas Brick & Tile Co., 530 MM Modular. Field verify size and color.

END OF ADDENDUM NO. 2

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SECTION 04810 - UNIT MASONRY ASSEMBLIES

PART 1 - GENERAL

1.01 Related Documents:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.02 Summary

A. Section Includes:

1. Clay facing brick.
2. Mortar and grout.
3. Reinforcement and anchorage.
4. Lintels.
5. Accessories.

1.03 Related Sections:

- A. Section 05500 - Metal Fabrications: Loose steel lintels and fabricated steel items.
- B. Section 07600 - Sheet Metal Flashing and Trim: Through-wall masonry flashings.
- C. Section 07900 - Joint Sealers: Backing rod and sealant at control and expansion joints.

1.04 References (where applicable):

- A. ACI 530/ASCE 5/TMS 402 - Building Code Requirements for Masonry Structures; American Concrete Institute International; 2008.
- B. ACI 530.1/ASCE 6/TMS 602 - Specification For Masonry Structures; American Concrete Institute International; 2008.
- C. ASTM A 82/A 82M - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement; 2005a.
- D. ASTM A 153/A 153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2005.
- E. ASTM C 129 - Standard Specification for Nonloadbearing Concrete Masonry Units; 2006.
- F. ASTM C 144 - Standard Specification for Aggregate for Masonry Mortar; 2004.
- G. ASTM C 150 - Standard Specification for Portland Cement; 2005.
- H. ASTM C 207 - Standard Specification for Hydrated Lime for Masonry Purposes; 2006.
- I. ASTM C 270 - Standard Specification for Mortar for Unit Masonry; 2007.
- J. ASTM C 404 - Standard Specification for Aggregates for Masonry Grout; 2006.
- K. ASTM C 476 - Standard Specification for Grout for Masonry; 2002.

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1.05 Submittals:

- A. Product Data: Provide data for masonry units, mortar, and masonry accessories.
- B. Samples: Submit 10 samples of facing brick units to illustrate color, texture, and extremes of color range.

1.06 Quality Assurance:

- A. Comply with provisions of ACI 530/ASCE 5/TMS 402 and ACI 530.1/ASCE 6/TMS 602, except where exceeded by requirements of the contract documents

1.07 Pre-Installation Meeting:

- A. Convene one week before starting work of this section.

1.08 Delivery, Storage, and Handling:

- A. Deliver, handle, and store masonry materials by means that will prevent mechanical damage and contamination by other materials.

1.09 Project Conditions:

- A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
- B. 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 ACI 530.1/ASCE 6/TMS 602.
 - 1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F (4 deg C) and higher and will remain so until masonry has dried, but not less than seven days after completing cleaning.
- C. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

PART 2 - PRODUCTS

2.01 Face Brick (Veneer):

- A. Type and Finish: Velour Modular Brick.
- B. Quality: ASTM C-216, Type FBS.
- C. Size: Nominal 4" x 2 2/3" x 8" or match existing.
- D. Units shall be uniform in all dimensions and texture, straight and free from cracks, spalls and other defects.
- E. Color: refer to Color Schedule - match existing.

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2.02 Mortar and Grout Materials:

- A. Portland Cement: ASTM C 150, Type I.
 - 1. Hydrated Lime: ASTM C 207, Type S.
 - 2. Mortar Aggregate: ASTM C 144.
 - 3. Grout Aggregate: ASTM C 404.
- B. Water: Clean and potable.

2.03 Reinforcement and Anchorage:

- A. Manufacturers of Joint Reinforcement and Anchors:
 - 1. Dur-O-Wal: www.dur-o-wal.com.
 - 2. Hohmann & Barnard, Inc: www.h-b.com.
 - 3. Masonry Reinforcing Corporation of America: www.wirebond.com.
 - 4. Substitutions: as approved by Architect / Engineer.
- B. Reinforcing Steel: ASTM A 615/A 615M Grade 40 (280) deformed billet bars; galvanized.
- C. Single Wythe Joint Reinforcement: Truss type; ASTM A 82/A 82M steel wire, mill galvanized to ASTM A 641/A 641M, Class 3; 0.1483 inch (3.8 mm) side rods with 0.1483 inch (3.8 mm) cross rods; width as required to provide not more than 1 inch (25 mm) and not less than 1/2 inch (13 mm) of mortar coverage on each exposure.
- D. Flexible Anchors: 2-piece anchors that permit differential movement between masonry and building frame, sized to provide not more than 1 inch (25 mm) and not less than 1/2 inch (13 mm) of mortar coverage from masonry face.
- E. Masonry Veneer Anchors: 2-piece anchors that permit differential movement between masonry veneer and structural backup, hot dip galvanized to ASTM A 153/A 153M, Class B.
 - 1. Anchor plates: Not less than 0.075 inch (1.91 mm) thick, designed for fastening to structural backup through sheathing by two fasteners; provide design with legs that penetrate sheathing and insulation to provide positive anchorage.
 - 2. Wire ties: Triangular shape, 0.1875 inch (4.75 mm) thick.
 - 3. Vertical adjustment: Not less than 3-1/2 inches (89 mm).

2.04 Flashings:

- A. Metal Flashing Materials: Galvanized Steel as specified in Section 07600.

2.05 Accessories:

- A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints.
- B. Compressible Filler: Pre-molded filler strips complying

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with ASTM D 1056, Grade 2A1; compressible up to 35%; formulated from neoprene, urethane or PVC.

- C. Bond Breaker Strips: Asphalt-saturated, organic roofing felt complying with ASTM D 226, Type 1 (No. 15 asphalt felt).
- D. Weeps: Free-draining mesh made from polyethylene strands, full height and width of head joint and depth 1/8 inch less than depth of outer wythe.
 - 1. Manufacturers:
 - a. Mortar Net USA, Ltd; Product - Mortar Net Weep Vents: www.martarnet.com
 - b. Substitutions: as approved by Architect / Engineer.

Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

2.06 Mortar and Grout 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. Limit cementitious materials in mortar to portland cement and lime.
- B. Mortar for Unit Masonry: ASTM C 270, using the Proportion Specification.
 - 1. All masonry: Type S.
 - a. Portland Cement Mixture: One part Grey Portland Cement; 1/4 to 1/2 part lime; sand, not less than 2-1/4 and not more than three times the sum of the volumes of cement and lime used, measured in damp, loose conditions.
 - b. **Colors at exterior face brick veneer to be selected by Architect to match or coordinate with existing.**
- C. Grout for Unit Masonry: Comply with ASTM C 476.
 - 1. Use grout of type (fine or coarse) that will comply with Table 1.15.1 in ACI 530.1/ASCE 6/TMS 602 for dimensions of grout spaces and pour height.
 - 2. Provide grout with a slump of 8 to 11 inches (200 to 280 mm) as measure according to ASTM C 143/C 143M.
- D. Mortar Mixing
 - 1. All mortars shall be machine mixed in equipment that is free of dirt, oil or grease and which is thoroughly cleaned and rinsed after each day's use. Mix no more

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- mortar than can be used before setting takes place.
2. Mortars shall be mixed placing all dry ingredients in the mixer first and mixing until uniform in color. Then mixed for 3 to 5 minutes with the maximum amount of water to provide workable consistency.
 3. No add-mixtures shall be used at any time in the mortar on this project, unless approved in writing by the Engineer.
 4. A waterproofing additive will be used in the mortar for brick.
 5. Construct one or two wooden boxes 12"x12"x6" deep and use them to measure the sand required in a batch. Add the cement or lime by the bag. Then add water, measuring by pail. When the desired consistency of mix is determined, mark the level of the mortar in the mixing drum. Use that as the mark for later batches when sand will be added by the shovel full. Repeat the measuring process halfway through the day or whenever the inspector requests it.
 6. Testing: General Contractor will observe a minimum of three (3) observed mixing sessions to verify that the quantities are being mixed as described in the proportions paragraph for Type "S" mortar.

PART 3 - EXECUTION

3.01 Examination:

- A. Verify that field conditions are acceptable and are ready to receive masonry.
- B. Verify that related items provided under other sections are properly sized and located.
- C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.02 Erection:

- A. Construction Requirements (Masonry Being Worked On)
 1. Air Temperature 40 F to 32 F: Heat sand or mixing water to minimum of 70 F and maximum of 160 F.
 2. Air Temperature 32 F to 25 F: Heat sand and mixing water to minimum of 70 F and maximum of 160 F.
 3. Air Temperature 25 F to 20 F: Heat sand and mixing water to minimum of 70 F and maximum of 160 F. Use salamanders or other sources of heat on both sides of walls under construction. Employ windbreaks when wind is in excess of 15 mph.

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4. Air Temperature 20 F and Below: Heat sand and mixing water to minimum of 70 F and maximum of 160 F. Provide enclosure and auxiliary heat to maintain air temperature above 32 F. Temperature of units when laid shall be not less than 20 F.
- B. Protection Requirements (Completed Masonry or Sections Not Being Worked On)
1. Mean Daily Air Temperature 40 F to 32 F: Protect masonry from rain or snow for 24 hrs.
 2. Mean Daily Air Temperature 32 F to 25 F: Completely cover masonry for 24 hrs.
 3. Mean Daily Air Temperature 25 F to 20 F: Completely cover masonry with insulating blankets for 24 hrs.
 4. Mean Daily Air Temperature 20 F and Below: Maintain masonry temperature above 32 F for 24 hrs. by enclosure and supplementary heat, by electric heating blankets, infrared heat lamps or other approved method.
- C. No masonry shall be laid when the ambient temperature is below 40 degrees F. All masonry shall be laid plumb, true to line and level, with accurately spaced courses, with each course breaking joints with the course below, unless noted otherwise on the drawings. A story pole and template shall be used and work checked with a surveying instrument to maintain level coursing.
- D. Work required to be built into masonry, including anchors, frames, bolts, sleeves, inserts, compressible fillers, expansion joints and flashing shall be built in as erection progresses. Concrete block into which anchor bolts will be installed shall be filled solid with mortar.
- E. Brick: Provide a 3/8" mortar bed with concave tooled horizontal and vertical joints. Refer to drawings for vertical coursing as related to openings and other features. Brickwork is to be brushed down daily to remove large pieces of mortar slag. At completion of brick masonry work, all exposed masonry surfaces shall be thoroughly cleaned and washed down with clean water and a stiff bristled brush or as recommended by the brick manufacturer and as approved by the Design/Builder. The brick masonry work shall be left in a state exhibiting properly and fully pointed joints and completely clean surfaces. Subcontractor shall build-in all features of brickwork as shown or indicated on the drawings including weeps, special coursing and or patterned elements.

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- F. The Subcontractor shall be responsible for furnishing all required labor, tools, and equipment as required to complete all areas of masonry work on the project. This shall be inclusive of all scaffolding, walk-boards and bracing as required to support the work until fully incorporated into the structure.
 - G. Subcontractor shall also furnish all materials save for the brick units as called out above. These materials include concrete block, mortar, reinforcing, ties and other accessories necessary for the execution of the masonry work.
- 3.03 Preparation:
- A. Direct and coordinate placement of metal anchors supplied for installation under other sections.
 - B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.
- 3.04 Coursing:
- A. Establish lines, levels, and coursing indicated. Protect from displacement.
 - B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
 - C. Brick Units:
 - 1. Bond: Running.
 - 2. Coursing: Three units and three mortar joints to equal 8 inches (200 mm).
 - 3. Mortar Joints: Concave.
- 3.05 Placing and Bonding:
- A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.
 - B. Masonry work shall be laid true to dimensions, plumb, square and in bond and properly anchored with vertical joints in line, plumb and true.
 - C. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures.
 - D. Battering corners of joints or excessive furrowing of mortar joints is not permitted.
 - E. Remove excess mortar and mortar smears as work progresses.
 - F. Interlock intersections and external corners.
 - G. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
 - H. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent

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broken masonry unit corners or edges.

- I. Provide a 3/8" joint around hollow metal door jambs and window frames to allow for sealant and expansion.
- 3.06 Weeps/Cavity Vents:
Install weeps in veneer walls at 24 inches on center horizontally above through-wall flashing, above shelf angles and lintels, and at bottom of walls.
- 3.07 Reinforcement and Anchorage - General:
- A. Fasten anchors to structural framing and embed in masonry joints as masonry is laid. Unless otherwise indicated on drawings or closer spacing is indicated under specific wall type, space anchors at maximum of 36 inches (900 mm) horizontally and 24 inches (600 mm) vertically.
 - B. Install additional anchors within 12 inches (305 mm) of openings and at intervals, not exceeding 36 inches (900 mm) around perimeter.
 - C. Locate anchor sections to allow maximum vertical differential movement of ties up and down.
- 3.08 Reinforcement And Anchorage - Masonry Veneer:
- A. Stud Back-Up: Secure veneer anchors to stud framed back-up and embed into masonry veneer at maximum 16 inches on center vertically and 24 inches on center horizontally. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches on center.
- 3.09 Masonry Flashings:
- A. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted.
 1. Extend flashings full width at such interruptions and at least 4 inches into adjacent masonry or turn up at least 4 inches to form watertight pan at non-masonry construction.
 2. Remove or cover protrusions or sharp edges that could puncture flashings.
 3. Seal lapped ends and penetrations of flashing before covering with mortar.
 - B. Extend metal flashings through exterior face of masonry and turn down to form drip. Install joint sealer below drip edge to prevent moisture migration under flashing.
 - C. Lap end joints of flashings at least 4 inches and seal watertight with mastic or elastic sealant.
- 3.10 Lintels:
- A. Install loose steel lintels or masonry lintels over

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openings as noted by Structural / Architectural Drawings.

3.11 Control Joints:

- A. Do not continue horizontal joint reinforcement through control joints.
- B. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.
- C. Size control joint in accordance with Section 07900 for sealant performance.

3.12 Built-In Work:

- A. As work progresses, install built-in metal door frames and other items to be built into the work and furnished under other sections.
- B. Install built-in items plumb, level, and true to line.
- C. Bed anchors of metal door frames in adjacent mortar joints. Fill frame voids solid with grout.
- D. Do not build into masonry construction organic materials that are subject to deterioration.

3.13 Tolerances:

- A. Maximum Variation from Alignment of Columns: 1/4 inch.
- B. Maximum Variation From Unit to Adjacent Unit: 1/16 inch.
- C. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.
- D. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.
- E. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.
- F. Maximum Variation of Joint Thickness: 1/8 inch in 3 ft.
- G. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch.

3.14 Cutting And Fitting:

- A. Cut and fit for pipes and conduit. Coordinate with other sections of work to provide correct size, shape, and location.
- B. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.15 Cleaning:

- A. Remove excess mortar and mortar droppings.
- B. Clean soiled surfaces with cleaning solution.

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3.16 Protection Of Finished Work:

- A. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

End of Section