SECTION 04814 – SUPPLEMENTAL

THIN BRICK PANELS

PART I — GENERAL

1.1 SCOPE.

Section includes insulated thin brick masonry units panel, anchorage, and accessories.

1.2 GENERAL.

1.2.01 Coordination. Convene minimum one week prior to commencing Work of this section for a pre-installation meeting.

1.2.02 Governing Standards. Comply with the requirements and recommendations set forth in the current publications and addenda thereto of the following standards:

ASTM (American Society for Testing and Materials) A153/A153M — Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
ASTM A6411A641 M — Zinc Coated (Galvanized) Carbon Steel Wire.
ASTM A6531A653M — Steel Sheet, Zinc Coated, (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
ASTM A951 — Masonry Joint Reinforcement.
ASTM C67 — Test Methods of Sampling and Testing Brick and Structural Clay Tile.
ASTM C73 — Calcium Silicate Face Brick (Sand-Lime Brick).
ASTM C90 — Load-Bearing Concrete Masonry Units.
ASTM C140 — Sampling and Testing Concrete Masonry Units, and Related Units.
ASTM C126 — Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units.
ASTM C129 — Non-Load-Bearing Concrete Masonry Units.
ASTM C216 — Facing Brick (Solid Masonry Units Made From Clay or Shale).
ASTM C270 — Mortar for Unit Masonry.
ASTM C476 — Grout for Masonry.
ASTM C652 — Hollow Brick (Hollow Masonry Units Made From Clay or Shale).

ASTM C744 — Pre-faced Concrete and Calcium Silicate Masonry Units.
ASTM D226 — Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
ASTM E119 — Test Methods for Fire Tests of Building Construction and Materials.
MSJC (Masonry Standards Joint Committee) Code — ACI (American Concrete Institute) 530/ASCE (American Society of Civil Engineers) 5/TMS (The Masonry Society) 402 — Building Code Requirements for Masonry Structures.
MSJC Specification —ACI 530.1./ASCE (American Society of Civil Engineers) 6/TMS 602 — Specifications for Masonry Structures.

1.3 QUALITY ASSURANCE. Perform Work in accordance with MSJC Code and MSJC Specification. Comply with referenced unit masonry standard for cold-weather construction. Do not lay masonry units that are wet or frozen. Remove masonry damaged by freezing conditions.

1.3.01 Testing Laboratory Qualifications. To qualify for employment in performing tests and inspection specified in this Section, an independent testing laboratory must demonstrate to Engineer's satisfaction, based on evaluation of submitted criteria conforming to ASTM C1093, that it has the experience and capability to conduct the testing indicated without delaying the progress of the Work.

1.3.02 Installer Qualifications. Company specializing in performing Work of this section with minimum five years documented experience.

1.3.03 Fire Performance Characteristics. Where indicated, provide materials and construction identical to those of assemblies whose fire resistance has been determined per ASTM El 19 by a testing and inspecting organization, by equivalent concrete masonry thickness, or by another means acceptable to authorities having jurisdiction.

1.3.04 Single- Source Responsibility for Masonry Units. Obtain exposed masonry units of uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from one manufacturer for each different product required for each continuous surface or visually related surfaces.

1.3.05 Single-Source Responsibility for Mortar Materials. Obtain mortar ingredients of uniform quality, including color for exposed masonry, from one manufacturer for each cementitious component and from one source and producer for each aggregate.

1.4 SUBMITTALS.

1.4.01 Drawings and Data. Submit data for decorative pre-faced masonry units, anchors, ties, flashings, and joint materials, submit certifying that products meet or exceed specified requirements.
Submit cold- and hot-weather construction procedures that show compliance with unit masonry standards.

1 .4.02 Certifications. Submit data for firms and persons specified in “Quality Assurance” Article demonstrating their capabilities and experience. Include list of completed projects.

1.4.03 Samples. Submit two samples each of miscellaneous units, decorative concrete masonry units, face brick, pre-faced concrete masonry units, faced brick and/or pre-faced concrete masonry units, to illustrate color, texture and/or extremes of color ranges. Colored masonry mortar samples for each color are required showing the full range of colors expected in the finished construction. Label samples to indicate type and amount of colorant used. Supply 20 each size, color, and type of glazed pre-faced units for repair stock.

1.4.04 Test Reports. Material test reports are required from a qualified independent testing laboratory employed and paid by the Contractor indicating and interpreting test results relative to compliance of mortar complying with property requirements of ASTM C270. Similar reports are required for grout mixes, including description of type, proportions of grout ingredients, and masonry units.

1.5 DELIVERY, STORAGE, AND HANDLING. Deliver masonry materials to project in undamaged condition. Store masonry units off the ground, under cover, and in a dry location to prevent their deterioration or damage due to moisture, temperature changes, contaminants, corrosion, and other causes. If units become wet, do not place until units are in an air-dried condition.

Store cementitious materials off the ground, under cover, and in dry location.
Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
Store masonry accessories including metal items to prevent corrosion and accumulation of dirt and oil.

PART 2- PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS.

Best Block Co.
Oldcastle Architectural Products
Trenwyth Industries, Inc.
or Approved Equal.
American Brick Company-Division of Williams Panel Brick Inc.

2.2 COMPONENTS.

2.2.01 General. Comply with the following requirements applicable to each form of brick required. Provide special molded shapes where indicated and as follows:
For applications requiring brick of form, color, texture, and size on exposed surfaces that cannot be produced by sawing standard brick sizes.
For applications where stretcher units cannot accommodate special conditions including those at corners, movement joints, bond beams, sashes, and lintels.
Provide units without cores or frogs and with all exposed surfaces finished for ends of sills, caps, and similar applications that expose brick surfaces that otherwise would be concealed from view.

2.2.02 Thin Brick Panels.

1. ASTM 1088-88 Grade, SW Type, TBSTBA or TBX with color as selected by the Engineer.
2. 2-1/4” x 7-5/8” x ½” thick slabs.
3. Special shapes, corners, thin pieces and loose slabs.
4. Product Trade Name: R-Brick Panel System.

5. Manufacturer: American Brick Company- Division of Williams Panel Brick Inc.

6. Prefabricated Panels: 16” x 48” size running bond or other brick coursing as specified.

2.2.03 Insulation: Insulation Backer Board

1. Extruded polystyrene board 1” thick, T & G all four sides.

2. Manufacturer’s product: Dow Chemical Co. StyrofoamSM.

2.2.04 Anchorage Material:

A. Starter angles and clips.

1. Galvanized steel starter angle

2. Starter angle shall be 22 gauge with the 1” insulation system.

3. Starter angle shall be continuous for the starter course.

4. Support angle clips for individual anchors shall be 3” long.

5. Mid panel clips shall be provided.

B. Fasteners

1. Twist shank masonry nails, cadmium plated.

2. #10 self drilling, self tapping, cadmium plated screws.

2.2.05 Wall Ties. Corrugated formed sheet metal, hot dip galvanized to ASTM A153 finish.

2.2.06 Wall Ties. Formed steel wire, adjustable, eye and pintle type, hot dip galvanized to ASTM A153 finish.

2.2.07 Dovetail Anchors. Bent steel strap, galvanized to ASTM A153 finish.

2.2.08 Nailinci Strips. Softwood, preservative treated for moisture resistance, dovetail shape, sized to masonry joints.

2.2.09 Weeps. Preformed plastic tubes, cotton wick filled or vents with sloping louvers with cotton rope.

2.2.10 Cavity Vents. Molded polyvinyl chloride grilles aluminum insect resistant.

2.2.11 Preformed Control Joints. Rubber, Neoprene or Polyvinyl chloride material. Provide with corner and tee accessories, heat or cement fused joints.

2.2.12 Joint Filler. Closed cell polyvinyl chloride, polyethylene, polyurethane or rubber oversized 50 percent to joint width; and self-expanding.

2.2.13 Building Paper. Meet ASTM D226, No. 15 or 30 asphalt saturated felt.

2.3 MISCELLANEOUS ANCHORS.

2.3.01 Anchor Bolts. Steel bolts shall comply with A 307, Grade A. Hex nuts shall comply with ASTM A563, where indicated. Provide flat washers. Hot-dip galvanized materials shall comply with ASTM A153, Class C. Utilize proper diameter and length as necessary. Non-headed bolts shall be bent in manner indicated. Headed bolts shall be I — shaped or L — shaped.

2.4 EMBEDDED FLASHING MATERIALS.

2.4.01 Laminated Flashing. Manufacturer's standard laminated flashing.

2.4.02 Copper-Fabric Laminate. Copper sheets of 5 oz weight per sq. ft. (1526 grams per square meter) shall be bonded with asphalt between 2 layers of glass fiber cloth. Use where flashing is fully concealed in masonry.

2.4.03 Adhesive for Flashing. Provide type recommended by manufacturer for proposed flashing material to be used as indicated.

2.4.04 Products. Subject to compliance with requirements. Products for copper fabric laminate flashing include:
"Copper Fabric," Afco Products Inc.
"Type FCC-Fabric Covered Copper," Phoenix Building Products. "Copper Fabric Flashing," Sandell Manufacturing Co., Inc.
"York Copper Fabric Flashing," York Manufacturing, Inc.
or Approved Equal.

2.5 MISCELLANEOUS MASONRY ACCESSORIES.

2.5.01 Bond Breaker Strips. Asphalt-saturated organic roofing felt complying with ASTM D226, Type I (No. 15 asphalt felt).

2.5.02 Weep Holes. Vinyl Weep Hole/Vent shall be provided by one-piece offset T-shaped units formed to fit in a vertical mortar joint by injection molding of flexible wings to seal against ends consisting of a louvered vertical leg with flexible wings to seal against ends of masonry units, and top flap; in color approved by Engineer to match that of mortar.
Subject to compliance with requirements, provide "Williams-Goodco Brick Vent" by Williams Products, Inc. or approved equal.

2.6 MASONRY CLEANERS. Proprietary Acidic Cleaner of manufacturer's recommended standard strength material shall be used. The general purpose of cleaner is designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry surfaces.
For masonry not subject to metallic oxidation stains, use formulation consisting of a concentrated blend of surface-acting acids, chelates, and wetting agents by "Sure Klean Vana Trol," ProS000, Inc. or approved equal. For additional guidelines consult "Masonry

Cleaning, Restoration, and Finishing".

2.7 MORTAR AND GROUT MIXES.

2.7.01 General Do not add admixtures including coloring pigments, air-entraining agents, accelerators, retarders, water repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.
Do not add calcium chloride to mortar or grout.

2.7.02 Mortar for Unit Masonry. Comply with ASTM C270, Property Specification for job-mixed mortar and ASTM C1142 for ready-mixed mortar.
Limit cementitious materials in mortar to Portland Cement and/or lime.
Use Type N for exterior, reinforced masonry, above-grade load-bearing and non- load-bearing walls and parapet walls; for interior load-bearing walls; for interior non- load-bearing and non-load-bearing partitions, reinforced masonry and for other applications where another type is not indicated.

2.7.03 Colored Pigmented Mortar. Select, mix and proportion pigments with other ingredients to produce color required to match Engineer's sample.

2.7.04 Grout for Unit Masonry. Comply with ASTM C476 and referenced "Unit Masonry" standard and Master Specification Section 04065, Masonry Mortar and Grout.

PART 3— EXECUTION

3.1 EXAMINATION. Verify that field conditions are acceptable and are ready to receive work.
Verify items provided by other sections of work are properly sized and located.
Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other specific conditions, and other conditions affecting performance of unit masonry. For the record, prepare written report, endorsed by Contractor listing conditions detrimental to performance of unit masonry.
Examine rough-in and built-in construction to verify actual locations of piping

connections prior to installation. Verify that substrate is smooth, sound and without projections. Do not proceed until unsatisfactory conditions have been corrected; beginning of installation means acceptance of existing conditions.

3.2 PREPARATION. Direct and coordinate placement of metal anchors supplied to other sections.

A. Panel Layout:

1. Line-up on wall, establishing bottom of lowest course, mark level horizontal line at this point.

2. Layout brick panels starting at corners working to center of wall.

3.3 BRICK PANEL INSTALLATION. Comply with referenced unit masonry standard and other requirements indicated applicable to each type of installation included in the Work.

A. Install moisture barrier (15# felt or equal) to all areas to be covered.

B. Install starter angle on marked line and over all openings with nail flange up, fasten at 16” o.c. to structure with appropriate fastener for substrate. Moisture barrier must lap over top of starter angle.

C. Install brick panels in accordance with manufacturer’s installation instruction.

1. Place panel firmly on starter angle.

2. Place angle clips on top of panel and fasten to substrate.

3. Install mid-panel clips and fasten to substrate.

4. Cut brick panels as required to achieve a proper fit.

5. Corner brick and individual brick installation:

   i. Apply two 1/” bead of adhesive horizontally to insulation board and press brick slabs firmly onto adhesive.

   ii. Support brick with 2 or 3 nails until adhesive sets.

D. Mortar Installation:

1. Mix mortar with mixing water solution to smooth consistency for application with grout bag or mortar pump.

2. Apply mortar mix into joints and tool with minimum 1” diameter round jointer. Brush and wash.

3.4 CONSTRUCTION TOLERANCES. Comply with construction tolerances of referenced unit masonry standard. Establish lines, levels, and coursing indicated, and maintain masonry courses to uniform dimension. Form bed and head joints of uniform thickness.

3.5 WEEPS AND VENTS. Provide weeps and vents in outer veneer at 24 inches (60.96 cm) on center horizontally above through-wall flashing, above shelf angles and lintels, at bottom of walls.

3.6 FLASHING.

3.6.01 General. Install embedded flashing and weep holes in masonry at shelf angles, lintels, ledges, other obstructions to the downward flow of water in the wall, and where indicated.
Prepare masonry surfaces so that they are smooth and free from projections that could puncture flashing. Place through-wall flashing on sloping bed or mortar and cover with mortar. Seal penetrations in flashing with adhesive sealant or tape as recommended by flashing manufacturer before covering with mortar.
At lintels and shelf angles, extend flashing a minimum of 4 inches (10.16 cm) into masonry at each end. Extend flashing from exterior face of outer wythe of masonry, through the outer wythe, turned up a minimum of 4 inches (10.16 cm), and through the inner wythe to within 1/2 inches (1 .27 cm) of the interior face of the wall in exposed masonry. Where interior surface of inner wythe is concealed by furring, carry flashing completely through the inner wythe and turn up approximately 2 inches (5.08 cm), unless otherwise indicated.
At head and sills, extend flashing as specified above unless otherwise indicated but turn up ends not less than 2 inches (5.08 cm) to form a pan. Cut off flashing flush with face of wall after masonry wall construction is completed. Extend flashings horizontally through outer wythe at foundation walls, above ledge or shelf angles and lintels, under parapet caps, and at bottom of walls, and turn down outside face to form a dip. Turn flashing up minimum 8 inches (20.32 cm) and bed into mortar joint of masonry seal to concrete or seal to sheathing over wood or steel stud framed backing. Lap end joints minimum 6 inches (15.24 cm)

and seal watertight. Turn flashing, fold, and seal at corners, bends, and interruptions. Also comply with Master Specification Section 07500, Flashing and Trim.

3.7 LINTELS. Install steel lintels where indicated.
Provide masonry lintels where shown and wherever openings of more than 1'O" (30.48 cm) for brick size units and 2'-O" (60.96 cm) for block size units are shown without structural steel or other supporting lintels. Provide precast or formed-in- place masonry lintels. Cure precast lintels before handling and installation. Temporarily support formed-in-place lintels.
For hollow concrete masonry unit walls, use specially formed bond beam units with reinforcement bars placed as indicated and filled with coarse grout.
Provide minimum bearing of 8 inches (20.32 cm) at each jamb, unless otherwise indicated.

3.8 MOVEMENT (CONTROL AND EXPANSION) JOINTS: Install control and expansion joints in unit masonry where indicated. Build in related items as the masonry progresses. Do not form a continuous span through movement joints unless provisions are made to prevent in-plane restraint of wall or partition movement. Do not continue horizontal joint reinforcement through control and expansion joints. To form control joints in concrete masonry, fit bond breaker strips into hollow contour in ends of block units on one side of control joint. Fill the resultant core with grout and rake joints in exposed faces. Install preformed control joint gaskets designed to fit standard sash block in continuous lengths. Seal butt and corner joints. Install special shapes designed for control joints. Install bond breaker strips at joint. Keep head joints free and clear of mortar or rake joint. Build in horizontal pressure-relieving joints where indicated; construct joints by either leaving an air space or inserting nonmetallic 50 percent compressible joint filler of width required to permit installation of sealant and backer rod specified in Master Specification Section 07600, Caulking and Sealers. Locate horizontal pressure- relieving joints beneath shelf angles supporting masonry veneer and attached to structure behind masonry veneer.

3.9 REPARING AND POINTING. Remove excess mortar and mortar smears. Replace defective mortar. Match adjacent work. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or if units do not match adjoining units. Install new units to match adjoining units and in fresh mortar or grout, pointed to eliminate evidence of replacement. During the tooling of joints, enlarge any voids or holes, except weep holes, and completely fill with mortar. Point-up all joints including

corners, openings, and adjacent construction to provide a neat, uniform appearance, prepared for application of sealants.

3.10 CLEANING. Clean soiled surfaces with cleaning solution. Use non-metallic tools in cleaning operations.

3.10.01 Final Cleaning. After mortar is thoroughly set and cured, clean masonry as follows:
Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels. Test cleaning methods on sample wall panel; leave 1/2 panel uncleaned for comparison purposes. Obtain Engineer's approval of sample cleaning before proceeding with cleaning of masonry.
Protect adjacent stone and non-masonry surfaces from contact with cleaner by covering then with liquid strippable masking agent, polyethylene film, or waterproof masking tape.
Wet wall surface with water prior to application of cleaners; remove cleaners promptly by rising thoroughly with clear water.
Clean brick by means of bucket and brush hand-cleaning methods described in BIA "Technical Note No. 20 Revised" using the following masonry cleaner:
Proprietary acidic cleaner; apply in compliance with directions of acidic cleaner manufacturer.
Provide final protection and maintain wall condition, in a manner acceptable to Installer, ensuring that unit masonry is without damage and deterioration at time of Substantial Completion.

End of Supplemental Section