McKee and Associates
Architecture and Interior Design

Addendum

No. ONE Date: 8.1.19

Project:

**RENOVATIONS TO THE
LIMESTONE COUNTY EMA FOR THE
LIMESTONE COUNTY COMMISSION**

MCKEE PROJECT NO. 18.170

The following changes and/or substitutions to the plans and specifications are hereby made a part of same and are incorporated in full force as part of the contract.

Bidders shall acknowledge receipt of this Addendum in writing on his Proposal Form.

A1.1 GENERAL MODIFICATIONS:

A. NONE

A1.2 SPECIFICATION MODIFICATIONS:

A. See the attached **Section 07410, Preformed Metal Roofing (Revised 8.1.19)**, herein.

A1.3 DRAWING MODIFICATIONS:

A. NONE

B4.1 CLARIFICATIONS & RESPONSES:

A. Metal Roof panels to match existing building in style and finish.

END OF ADDENDUM

SECTION 07410 - PREFORMED METAL ROOFING (Revised 8.2.19)

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract including General and Supplementary Conditions and Division 1 Specification sections apply to work of this section.

DESCRIPTION OF WORK:

Extent of each type of preformed roofing is indicated on the drawings and by provisions of this section. Preformed roofing is hereby defined to include panels which are structurally capable of spanning between supports spaced as indicated.

Types of material required include the following:

1. Formed Roof Panels for Standing Seam Installation
2. Workmanship
3. Inspection of Surfaces
4. Protection
5. Delivery, Samples and Shop Drawings

QUALITY ASSURANCE:

The Contractor shall engage and pay a Certified Roofing Consultant, approved by Architect, will attend the pre-roofing conference and provide a certificate of compliance in a start-up, in progress and final inspection mode, certifying that the roof system will be approved to receive a **20** Year manufacturer's warranty.

Recognized approved independent firm will consist of:

1. Hixson Consultants, Inc.,
   947 1st Avenue West,
   Alabaster, AL. 35007
   (205) 663-2220, attention Mr. Tyler Hixson

   or

2. Roof Asset Management, Inc.
   4950 Woodfield Drive
   Millbrook, Alabama 36054
   (334) 590-7999

Performance Test Standards: Provide preformed panel systems which have been pretested and certified by manufacturer to provide specified resistance to air and water infiltration and structural deflection and failure when installed as indicated and when tested in accordance with AAMA 501, "Methods of Test for Metal Curtain Walls".

Field Measurements: Where possible, prior to fabrication of prefabricated panels, take field easurements of structure or substrates to receive panel system. Allow for trimming panel units where final dimensions cannot be established prior to fabrication.

Impact Resistance: Roof coverings installed on low-slope roofs (roof slope <2:12) shall resist impact damage based on the results of tests conducted in accordance with ASTM D 3746, ASTM D 4272, CGSB 37-GP-52M or the "Resistance to Foot Traffic Test "FM 4470.

ROOFERS QUALIFICATIONS
Installation of the metal roofing and roof related accessories shall be performed by **Certified / Preferred Roofers** authorized by the manufacturer as trained and qualified to erect the manufacturer's product.

The Contractor shall submit a letter from the manufacturer of the metal roofing system, certifying the date of certification from the Manufacturer and the dates and year the Roofing Contractor attended school, prior to full certification that this Roofing Contractor is a certified roofer.

SUBMITTALS:

Product Data: Submit manufacturer's product specifications, standard details, certified product test results, installation instructions and general recommendations, as applicable to materials and finishes for each component and for total system of preformed panels.

Samples: Submit 2 samples 12" square, of each exposed finish material.

Shop Drawings: Submit small-scale layouts of panels on roofs, and large-scale details of edge conditions, joints, corners, custom profiles, supports, anchorages, trim, flashings, closures, and special details. Distinguish between factory an field assembly work.

WARRANTY:

Roof Panels: Durability of the metallic coated and unpainted roof panels due to rupture, structural failure or perforation shall be warranted for a period of **twenty (20) years** by the manufacturer.

Color Finish: The exterior color finish for painted panels shall be warranted by the Manufacturer for twenty-five (25) years against blistering, peeling, cracking, flaking, chalking and shipping. Excessive color change and chalking shall be warranted for twenty five (25) years. Color change shall not exceed 5 NBS units per ASTM D2244.68T, chalking shall not be less than a rating of 6 (white) or 8 (other colors) per ASTM D-659.

Compatibility: Provide products which are recommended by manufacturers to be fully compatible with indicated substrates or provide separation materials as required to eliminate contact between incompatible materials.

All roof warranties shall be provided to the Owner, by the Contractor at the Final Inspection to obtain the Substantial Completion.

Standard manufacturer’s roofing guarantees which contain language regarding the governing of the guarantee by any state other than the State of Alabama, must be amended to exclude such language and substituting the requirement that the Laws of the State of Alabama shall govern all such guarantees.

SPECIAL PROJECT WARRANTY:

Contractor shall furnish Contractors **5 Year** Alabama Building Commission Roofing Guarantee.

GENERAL WARRANTY REQUIREMENTS:

WEATHER TIGHTNESS: The entire installation (sub-framing, clips, panels, fasteners, rakes, eave, ridge, valley flashing conditions, roof to wall conditions as-well-as all materials specified as supplied by the manufacturer) shall be guaranteed weather tight for a minimum of twenty **20 years (NO Dollar Limit NDL)**. Provide written warranty, signed by metal roofing manufacturer and his authorized installer, agreeing to replace/repair defective materials and workmanship during the warranty period, certified by the third party inspection firm as stated under QUALITY ASSURANCE. This warranty shall be identified as neither Non-Depreciating, Non-Pro-Rated, nor have exclusions that identify, valleys, curbs, and flashings. The warranty shall be signed by the Manufacture of the roofing materials and the authorized installer.

All roof warranty’s shall be provided to the Owner, by the Contractor at the Final Inspection to obtain the Substantial Completion.

Standard manufacturer’s roofing guarantees which contain language regarding the governing of the

guarantee by any state other than the State of Alabama, must be amended to exclude such language, and substituting the requirement that the Laws of the State of Alabama shall govern all such guarantees.

The roofing manufacture shall be required to provide documentation certifying that the roof design provided complies with the performance requirements as set forth in IBC Chapter 15, Section 1504. The documentation shall be attached to the roof warranty at the close out of the project.

Roof Panels: Durability of the metallic coated and unpainted roof panels due to rupture, structural failure or perforation shall be warranted for a period of twenty (20) years by the manufacturer.

The exterior color finish for painted panels shall be warranted by the Manufacturer for twenty-five (25) years against blistering, peeling, cracking, flaking, chalking and shipping. Excessive color change and chalking shall be warranted for twenty-five (25) years. Color change shall not exceed 5 NBS units per ASTM D2244.68T, chalking shall not be less than a rating of 6 (white) or 8 (other colors) per ASTM D-659.

Compatibility: Provide products which are recommended by manufacturers to be fully compatible with indicated substrates or provide separation materials as required to eliminate contact between incompatible materials.

DELIVERY, STORAGE AND HANDLING:

Deliver and store prefabricated components, sheets, panels and other manufactured items so they will not be damaged or deformed.

Stack materials on platforms or pallets, covered with tarpaulins or other suitable weathertight ventilated covering. Store metal sheets or panels so that water accumulations will drain freely. Do not store sheets or panels in contact with other materials which might cause staining.

PRE-ROOFING CONFERENCE:

A pre-roofing conference is required before any roofing materials are installed. This conference shall be conducted by a representative of the Architect and attended by representatives of the Owner, General Contractor, Roofing Contractor, Sheet Metal Contractor, Roof Deck Manufacturer (if applicable), and the Roofing Materials Manufacturer (if warranty is required of this manufacturer). If equipment of substantial size is to be placed on the roof, the Mechanical Contractor must also attend this meeting. Provide at least 72 hours advance notice to participants prior to convening pre-roofing conference.

The pre-roofing conference is intended to clarify demolition and application requirements for work to be completed before roofing operations can begin. This would include a detailed review of the specifications, roof plans, roof deck information, flashing details, and approved shop drawings, submittal data, and samples. If conflict exists between the specifications and the Manufacturer's requirements, this shall be resolved. If this pre-roofing conference cannot be satisfactorily concluded without further inspection and investigation by any of the parties present, it shall be reconvened at the earliest possible time to avoid delay of the work. In no case should the work proceed without inspection of all roof deck areas and substantial agreement on all points.

The following are to be accomplished during the conference:

1. To review all Factory Mutual and Underwriters Laboratories requirements listed in the specifications and resolve any questions or conflicts that may arise.
2. To establish trade-related job schedules, including the installation of roof-mounted mechanical equipment.
3. To establish roofing schedule and work methods that will prevent roof damage.
4. Require that all roof penetrations and walls be in place prior to installing the roof.
5. To establish those areas on the job site that will be designated as work and storage areas for roofing operations.
6. To establish weather and working temperature conditions to which all parties must agree.
7. To establish acceptable methods of protecting the finished roof if any trades must travel across or work on or above any areas of the finished roof.

The Architect shall prepare a written report indicating actions taken and decisions made at this pre-roofing conference. This report shall be made a part of the project record and copies furnished the General Contractor and the Owner.

PART 2 – PRODUCTS

Manufacturer: The following manufacturers' products have been used to establish minimum standard for materials, workmanship and function:

1. American Buildings Company/A Nucor Company; **(Basis of Design and Quality)**; www.americanbuildings.com; 1150 State Docks Road, Eufaula, Alabama 36027; Phone: 334.687.2032.

2. Butler Manufacturing; www.butlermfg.com; 1540 Genessee St., Kansas City, MO. 64102; Phone: 816.968.3000

3. MBCI Manufacturing; www.mbci.com; 2280 Monier Avenue, Lithia Springs, Georgia, 30122; Phone: 844.2506 or 770.729.4772.

4. Varco Pruden; www.vp.com; 3200 Players Club Circle, Memphis, TN 38125; Phone: 1.901.748.8000

5. Morin / A Kingspan Group Company; www.kingspan.com/us/en-us/product-groups/metal-roof-wall-systems; 1975 Eidson Drive, Florida, 32724; Phone: 860.584.0900 or 800.640.9501

6. ACI Building Systems, LLC.; www.acibuildingsystems.com; 10125 Highway 6 West, Batesville, MS 38606; Phone: 662.563.4574

MATERIALS:

1. **All materials shall be from a single source.**

2. ~~**Loc-Seam 360 with Kynar 500 Finish by American Buildings Company/A Nucor Company**~~**. Standing Seam II (S2P) with Galvalume Finish by American Buildings Company/A Nucor Company. Match existing building.**

   a. Standing seam roof panel shall have a configuration consisting of 2 inch high vertical rib spaced on ~~16~~ **24** inch centers. The panel shall have flush horizontal and vertical surfaces to facilitate sealing at terminations. Panel configurations which create voids requiring supple metal closure devices shall not be considered acceptable. Panels shall be joined at the sidelap with an interlocking seam mechanically locked by a seaming machine after installation. The female panel seam shall have a factory applied sealant, in compliance with UL90.

   b. The panel shall be **24 gauge (minimum)** commercially pure aluminum coated steel meeting military specification MIL-C-4174A Type II, Galvalume ~~or G90 galvanized~~. Minimum yield strength shall be 80,000 PSI.

   c. Deviations in appearance from the quality standard manufacturer's panel must be approved by the owner before acceptance.

   d. Changes in framing or variations in loading to the existing structure caused by alternate roof systems shall be subject to review and all costs for any modifications shall be the responsibility of the General Contractor.

   e. System Description: The roof system is a concealed fastener interlocking standing seam system. **Panel must not be roll formed on site, nor use a portable roll former whereby the contractor manufactures the panel versus a single sourced manufacture providing the finished materials with a single sourced warranty**.

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f. Roof panels shall be standing seam interlocking design and secured to the supports with a concealed structural fastening system. UL certification must appear on the panel if so requested.

g. The concealed attachment system shall eliminate all through penetration of the exposed roofing surface into structural supports and allow the roof covering to move independently of any differential thermal movement by the framing system.

h. The panel to structural clip shall be designed to provide +/- one inch of thermal movement. It shall incorporate a self centered feature to assure one inch of movement in both directions.

i. The standing seam shall have integral male and female interlocking ribs with a factory applied, non-hardening sealant, and the seams shall be continuously locked or crimped together by mechanical means during installation.

j. Roof panels shall be fastened to the support framing members with a concealed clip or backing device of steel having a protective metallic coating. Through penetration of the roofing surface by exposed fasteners shall occur only for non-structural connection at panel termination and roof perimeter flashing location.

k. Panel termination and perimeter flashing (attached to roof panels) shall be sealed with sealants recommended by the manufacturer.

l. Required closures shall be metal. Non-metal closures shall not be acceptable.

METAL FINISHES:

General: Apply coating either before or after forming and fabricating panels, as required by coating process and as required for maximum coating performance capability. Protect coating promptly after application and cure, by application of strippable film or removable adhesive cover and retain until installation has been completed.

Color Finish on Roof Panels and Trim:

a. ~~Panels shall have a factory color finish on the exposed side. The exposed finish shall consist of a 70% KYNAR 500® resin base coating applied to a cleaned, pretreated and primed surface. The dry film thickness of the exterior coating shall not be less than .90 mil minimum, inclusive primer. The interior color finish shall consist of a backer coat with a dry film thickness of 0.5 mil. A low gloss finish is required to minimize the appearance of oil canning.~~

b. Color of the exterior roof panels and trim shall be ~~selected from manufactures standard color pallet.~~ **Aluminum coated Galvalume finish to match existing building.**

c. ~~The exterior color finish shall meet or exceed the performance requirements specified below.~~

~~Paint Color Test:~~

~~**Test:** Film Thickness; **Test Method**: ASTM D-1005; **Performance**: 0.2 mil primer 0.8-0.9 mil topcoat~~
~~**Test:** 60° @ under 10 low gloss; **Test Method**: ASTM D-523; **Performance**: 25-35~~
~~**Test:** IR Reflectivity; **Test Method**: ASTM D-4803-97; **Performance**: Must meet 25% Minimum (exceeds)~~
~~**Test**: Pencil Hardness; **Test Method**: ASTM D-3363; **Performance**: HB-H~~
~~**Test**: Flexibility, T-Bend; **Test Method**: ASTM D-4145; **Performance**: 2-T Galvalume Steel~~
~~**Test**: Adhesion; **Test Method**: ASTM D-3359; **Performance**: No adhesion Loss~~
~~**Test**: Reverse Impact; **Test Method**: ASTM D-2794; **Performance**: No cracking or loss of adhesion~~
~~**Test**: Abrasion, Falling Sand; **Test Method**: ASTM D-968; **Performance**: 65-85 1/mil~~
~~**Test**: Mortar Resistance; **Test Method**: ASTM C-267; **Performance**: No effect~~
~~**Test**: Detergent Resistance; **Test Method**: ASTM D-2248 3% 72 hrs. @ 100°F; **Performance**: No effect~~
~~**Test**: Acid Pollutants; **Test Method**: ASTM D-1308 10% Muriatic Acid (15 min) 20% Muriatic Acid (15 min); **Performance**: No effect, AAMA 605.2 <5units color change~~

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~~**Test**: Acid Rain Test; **Test Method**: Kesternich; **Performance**: 15 cycles minimum, no objectionable color change~~
~~**Test**: Alkali Resistance; **Test Method**: 20% Sodium Hydroxide (1hr); **Performance**: No effect~~
~~**Test**: Salt Spray Resistance 5% @ 95° F; **Test Method**: ASTM B-117; **Performance**: 1000 hrs Galvalume steel~~
~~**Test**: Humidity Resistance 100% @ 100° F; **Test Method**: ASTM D-2247; **Performance**: Passes 1000 hrs Galvalume Steel~~
~~**Test:** South Florida exposure; **Test Method**: ASTM D-2244; **Performance**: <5 units color change~~
~~**Test**: UVB (313 bulbs); **Test Method**: ASTM G-53; **Performance**: Passes 3000 hrs~~
~~**Test**: Chalk Resistance; **Test Method**: ASTM D-4214; **Performance**: Rating of 8 min~~

~~Colors must meet the following: The solar reflectance for a steep-sloped roof must be a minimum of 25%, dropping no less than to 15% after three years. Low sloped roofs (below 2:12) must be a minimum of 65% dropping to no less than 50% after three years.~~

ROOF PANELS:

General: Provide roofing sheets formed to the general profile or configuration indicated. All roof panels shall be full length, no end laps allowed.

Zinc-Coated Steel Sheets: Provide structural quality hot-dip galvanized steel sheets, complying with requirements of ASTM A446, Grade C, with G90 coating complying with ASTM A525.

Aluminum Coated Steel Sheets: Provide drawing quality aluminum coated steel sheets, complying with requirements of ASTM A463, with T1-40 coating.

1. Metal thickness not less than 24 ga. (0.0179”).

Accessories: Provide the following sheet metal accessories factory formed of the same material and finish as the roofing and siding.

1. Flashings.
2. Fillers.
3. Metal expansion joints.
4. Facias
5. Ridge covers.
6. Cover exposed structural and secondary members at exterior.

Fasteners:

1. Provide self-tapping screws, bolts, nuts, self-locking rivets, self-locking bolts, end welded studs, and other suitable fasteners as standard with the manufacturer designed to withstand design loads.
2. Provide metal-backed neoprene washers under heads of fasteners bearing on weather side of panels.
3. Use stainless steel fasteners for exterior application and galvanized or cadmium plated fasteners for interior applications.
4. Locate and space fastenings in true vertical and horizontal alignment. Use proper type fastening tools to obtain controlled uniform compression for positive seal without rupture of neoprene washer.
5. Provide fasteners with heads matching color of roofing sheets by means of plastic caps or factory-applied coating.

Flexible Closure Strips: Provide closed-cell, expanded cellular rubber, self-extinguishing flexible closure strips. Cut or premold closure strips to match corrugation configuration of roofing and siding sheets. Provide closure strips where indicated or necessary to ensure weathertight construction.

Sealing Tape: Provide pressure sensitive 100 percent solids isobutylene tripolymer compound sealing tape with release paper backing. Provide permanently elastic, non-sag, non-toxic, non-staining tape not less than 1/2" wide and 1/8" thick.

Joint Sealants: Provide one-part elastomeric polyurethane polysulfide or silicone rubber sealant as recommended by the building manufacturer.

MISCELLANEOUS MATERIALS:
Internal Panel Framing: Manufacturer's standard.

Fasteners: Manufacturer's standard noncorrosive types, with exterior heads gasketed.

Accessories: Except as indicated as work of another specification section, provide components required for a complete roofing/siding system, including:

1. Trim
2. Copings
3. Fascias
4. Gravel stops
5. Mullions
6. Sills
7. Corner Units
8. Ridge Closures
9. Clips
10. Seam Covers
11. Battens
12. Flashings
13. Gutters
14. Downspouts
15. Louvers
16. Sealants
17. Gaskets
18. Fillers
19. Closure Strips
20. All similar items.
21. Match materials/finishes of preformed panels.

Bituminous Coating: Cold-applied asphalt mastic, SSPC paint 12, compounded for 15 mil dry film thickness per coat.

SHEET METAL ACCESSORIES:

General: Provide coated steel sheet metal accessories with coated steel roofing and siding panels.

Gauges of Materials:

1. Roof Panels - 24 ga.
2. Rake Flashing - 26 ga.
3. Fascia – 26 ga.

Roof Curbs: The fully welded roof curb units shall be fabricated to the specifications of the roofing manufacturer, thus assuring its compatibility with the roof constructions framing and covering. Roof curbs shall be of size and design to accommodate the various projecting elements to be retained. The contractor is responsible for verification of the various sizes, configurations, and requirements. It is expected that the contractor use the existing conditions, surfaces, and elements as a source material for these requirements. The roof curb shall be of size and design required for fan, vent or air conditioning equipment. It shall support the specific ventilating device in a nominally horizontal position above the weather surface of the roof and adequately deflect storm drainage around its periphery. All sealants, closures and fasteners, etc. shall be included for proper installation and performance. Roof subframing and/or headers shall be provided for additional rigidity and support of the curb and its ventilating device. Roof vent curb and supporting framing shall provide for expected expansion and contraction of roof panels.

Roof Jacks: Openings 8” in diameter or smaller may be flashed and sealed to the roof panel by jacks. Material shall be an EPDM material with an aluminum sealing ring base. Jacks are acceptable providing

attachment in flat of panel and no standing seam rib has been altered. If rib must be cut, a curb must be used. Installation of roof jacks must comply with manufacturer's instructions.

PART 3 - EXECUTION

INSTALLATION:

General: Comply with panel fabricator's and material manufacturer's instructions and recommendations for installation, as applicable to project conditions and supporting substrates. Anchor panels and other components of the work securely in place, with provisions for thermal/structural movement.

1. Install panels with concealed fasteners.

Installation Tolerances: Shim and align panel units within installed tolerance of 1/4" in 20'-0" on level/plumb/slope and location/line as indicated, and within 1/8" offset of adjoining faces and of alignment of matching profiles.

Joint Sealers: Install gaskets, joint fillers and sealants where indicated and where required for weatherproof performance of panel systems. Provide types of gaskets and sealants/fillers indicated or, if not otherwise indicated, types recommended by panel manufacturer.
Refer to other sections of these specifications for product and installation requirements applicable to indicated joint sealers.

Water shall be prevented from entering the building during the work. This shall involve keeping penetrations sealed, planning the work to reroof sections and sealing new to old or other precautionary and effective safeguards.

ROOFING:

General: Arrange and nest sidelap joints so that prevailing winds blow over, not into, lapped joints. Apply panels and associated items for neat and weathertight enclosure. Avoid "panel creep" or application not true to line. Protect factory finishes from damage.

1. Provide weatherseal under ridge cap. Flash and seal roof panels at eave and rake with rubber, neoprene or other closures to exclude weather.

Standing Seam Roof Panel System: Fasten roof panels to hat channels with concealed clip in accordance with the manufacturer's instructions.

1. Install clips at each support using self-drilling fasteners.
2. At end laps of panels install two strips of tape caulk between panels.
3. Install factory-caulked cleats at standing seam joints. Machine seam cleats to the panels to provide a weather-tight joint.

Sheet Metal Accessories: Install gutters, downspouts, ventilators, louvers, and other sheet metal accessories in accordance with manufacturer's recommendations for positive anchorage to building and weathertight mounting. Adjust operating mechanism for precise operation.

CLEANING AND PROTECTION:

Damaged Units: Replace panels and other components of the work which have been damaged or have deteriorated beyond successful repair by means of finish touch-up or similar minor repair procedures.

Cleaning: Remove temporary protective coverings and strippable films (if any) as each panel is installed. Upon completion of panel installation, clean finished surfaces as recommended by panel manufacturer, and maintain in a clean condition during construction.

END OF SECTION