Project:

**Fluid Applied Restoration Project for**
Thompson Middle School and Creek View Elementary School for the
Alabaster City Board of Education
Alabaster, Alabama

**MCKEE PROJECT NO. 2020.140**
**ALABAMA DEPARTMENT OF CONSTRUCTION MANAGEMENT NO. 2020.316**

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. See the attached Pre-Bid Sign-In Sheet dated June 18, 2020, herein.

A1.2 SPECIFICATION MODIFICATIONS:

A. Refer to Section 01000, Alternates [Revised 6.16.20], herein.
B. Refer to Section 07540, Fluid Applied Restoration for Modified Bitumen Roofing [Revised 6.11.20], herein.

A1.3 DRAWING MODIFICATIONS:

A. Refer to the attached drawings as follows:

A1.4 CLARIFICATIONS & RESPONSES:

A. See the following clarifications as follows:
   1. Wall Coating – Contractor shall coat the walls the full height of wall.
   2. Roof Ballast – Contractor shall remove all ballast completely from site.

END OF ADDENDUM
SECTION 01000 – ALTERNATES [Revised 6.16.20]

PART 1 - GENERAL

RELATED DOCUMENTS

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

DESCRIPTION OF REQUIREMENTS

Definition: An Alternate is an amount proposed by bidders and stated on the Proposal Form that will be added to or deducted from Base Bid amount if the Owner decides to accept a corresponding change in either scope of work or in products, materials, equipment, systems or installation methods described in Contract Documents.

Coordination: Coordinate related work and modify or adjust adjacent work as required to ensure that work affected by each accepted Alternate is complete and fully integrated into the project.

Notification: Immediately following award of Contract, prepare and distribute to each party involved notification of the status of each Alternate. Indicate whether Alternates have been accepted, rejected or deferred for consideration at a later date. Include a complete description of negotiated modifications to Alternates, if any.

Schedule: A “Schedule of Alternates” is included at the end of this section. Specification section referenced in the Schedule contain requirements for materials and methods necessary to achieve the work described under each Alternate.

Include as part of each Alternate, miscellaneous devices, appurtenances and similar items incidental to or required for a complete installation whether or not mentioned as part of the Alternate.

SCHEDULE OF ALTERNATES

ADDITIVE Bid Alternate #1 Cost to Seal Masonry Wall Joints @ Ground Level, per specification Section 07120, Masonry Waterproofing.

ADDITIVE Bid Alternate #2 Cost for work to perform additional roof restorations as indicated on drawings and per Section 07540.

END OF SECTION
PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Provide moisture scan, then demolition and replacement of wet roof materials, then a fluid applied restoration system for field and flashings for modified membrane roofing, including sheet metal and drain repairs.

1.3 SYSTEM DESCRIPTION

A. It is the intent of this specification to install a long-term liquid-applied roof system that meets or exceeds all current NRCA guidelines as stated in the most recent edition of the NRCA Roofing and Waterproofing Manual. Please discuss any concerns with the Architect and Roofing System Manufacturer.

1.4 SUBMITTALS

A. Manufacturer’s signed Shop Drawings containing;

1. Site Pressures for Field (ASCE-7) and Perimeter Metal (ANSI-SPRI ES-1).
2. Scope of Work for IBC and Warranty Compliance.
3. CAD drawn details (Field, Flashings, Metal Edge, and Curbs, dimensioned), showing fastener types and spacing, and interfacing for coatings, reinforcements, mastics and sealants.
4. Roof Plan scaled, with construction notes as needed.
5. Design Summary
   a. IBC-2015
   b. ASCE 7-10
      (1) Safety Factor: 1.65
      (2) Test Method: ASTM E-1592.
   c. SMACNA 5th Edition or later.

B. Submit Section 01360 Manufacturer Site Certification demonstrating compliance with specified warranty requirements and non-compliance shall be grounds for rejection of Bid.

C. Submit certification that the roof system furnished is Tested and Approved by Factory Mutual as a Class 1A roof system, or Listed by Underwriters Laboratories or Warnock Hersey for external fire tests of ASTM E-108 Class A.

D. Provide Moisture Scan report meeting ASTM C-1153.
   1. Performed by Level 3 Thermographer or registered engineer.
   2. Wet locations scaled on drawing, dimensioned, summary square footage of each wet location and total footage and professional assessment of each leak source.
   3. Photos; captioned nighttime (infrared) and daytime photos of wet locations.
4. Wet locations marked on rooftop with fluorescent orange paint.

E. Submit Product Data Sheets for each type of product specified.

F. Show evidence that the Installer specializes in fluid applied membrane roof restorations with a minimum 5 years experience and who is certified by roofing system manufacturer.

G. Provide a sample of each product.

H. Unexecuted Manufacturer's warranty.

I. Certified copy of ISO 9001 compliance.

1.5 QUALIFICATIONS

A. Installer: Company specializing in roof restoration with a minimum five [5] years experience and certified by roofing system manufacturer as qualified to install manufacturer’s roofing materials.

B. Installer’s Field Supervision: Maintain a full-time Supervisor/Foreman on job site during all phases of roofing work and at any time roofing work is in progress. Maintain proper supervision of workmen. Maintain a copy of the specifications in the possession of the Supervisor/Foremen and on the roof at all times.

C. Immediately correct roof leakage during construction. If the Contractor does not respond within twenty four (24) hours, the Owner has the right to hire a qualified contractor and backcharge the original contractor.

D. Insurance Certification: Assist Owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on roofing and associated work.

1.6 PRE-INSTALLATION CONFERENCE

A. Pre-Roofing Conference: Convene a pre-roofing conference approximately two (2) weeks before scheduled commencement of restoration system application and associated work.

B. Require attendance of installer of each component of associated work, installers of deck or substrate construction to receive roofing work, installers of rooftop units and other work in and around roofing which must precede or follow roofing work (including mechanical work if any), Architect, Owner, Building Commission Inspector, roofing system manufacturer’s representative, and other representatives directly concerned with performance of the Work, including (where applicable) Owner’s insurers, testing agencies and governing authorities. If equipment of substantial size is to be placed on the roof, the Mechanical Contractor must also attend this meeting.

C. Objectives of conference shall include:
   1. Review foreseeable methods and procedures related to roofing work.
   2. Tour representative areas of roofing substrates (decks) inspect and discuss condition of substrate, roof drains, curbs, penetrations and other preparatory work performed by others.
   3. Review structural loading limitations of deck and inspect deck for loss of flatness and for required attachment.
4. Review roofing system requirements (drawings, specifications and other contract documents).
5. Review required submittals both completed and yet to be completed.
6. Review and finalize construction schedule related to roofing work and verify availability of materials, installer’s personnel, equipment and facilities needed to make progress and avoid delays.
7. Review required inspection, testing, certifying and material usage accounting procedures.
8. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing (if not mandatory requirement).
9. Record discussion of conference including decisions and agreements (or disagreements) reached and furnish copy of record to each party attending. If substantial disagreements exist at conclusion of conference, determine how disagreements will be resolved and set date for reconvening conference.
10. Review notification procedures for weather or non-working days.
11. 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.

1.7 DELIVERY, STORAGE AND HANDLING

A. Deliver products to site with seals and labels intact, in manufacturer’s original containers, dry and undamaged.

B. Do not leave unused materials on the roof overnight or when roofing work is not in progress unless protected from weather and other moisture sources.

C. It is the responsibility of the contractor to secure all material and equipment on the job site. If any material or equipment is stored on the roof, the contractor must make sure that the integrity of the deck is not compromised at any time. Damage to the deck caused by the contractor will be the sole responsibility of the contractor and will be repaired or replaced at his expense.

1. Handle and store roofing materials and place equipment in a manner to avoid significant or permanent damage to deck or structural supporting members.

D. Refer to Division 1 Sections “Summary of Work” and “Special Conditions,” for additional information and requirements.

1.8 MANUFACTURER’S INSPECTIONS

A. Require attendance of roofing materials manufacturers’ representatives at site during installation of the fluid membrane system. Perform field inspection and testing as required.
   1. Keep the Architect informed as to the progress and quality of the work as observed.
   2. Provide job site inspections a minimum of two days a week.
   3. Report to the Architect in writing any failure or refusal of the Contractor to correct unacceptable practices called to the Contractor’s attention.
   4. Confirm after completion that manufacturer has observed no applications procedures in conflict with the specifications other than those that may have been previously reported and corrected.

B. Correct defects or irregularities discovered during field inspection.

C. Keep wet film gauges on-hand at all times during the application process to ensure proper coverage.
1.9 **PROJECT CONDITIONS**

A. Weather Condition Limitations: Do not apply roofing system during inclement weather or when a 40% chance of precipitation or greater is expected.

B. Proceed with roofing work only when existing and forecasted weather conditions will permit unit of work to be installed in accordance with manufacturer’s recommendations and warranty requirements.

C. Materials shall be stored at room temperature until immediately prior to application. Discontinue the application if the material cannot be stored at a temperature, which permits even distribution during application.

D. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.

E. When applying materials with spray equipment, take precautions to prevent over spray and/or solvents from damaging or defacing surrounding walls, building surfaces, vehicles or other property. Care should be taken to do the following:
   1. Close air intakes into the building.
   2. Have a dry chemical fire extinguisher available at the jobsite.
   3. Post and enforce “No Smoking” signs.

F. Avoid inhaling spray mist; take precautions to ensure adequate ventilation.

G. Protect completed roof sections from foot traffic for a period of at least 48 hours (at 75F and 50% relative humidity) or until fully cured.

H. Take precautions to ensure that materials do not freeze.

I. Minimum temperature for application is 40F and rising.

1.10 **SEQUENCING AND SCHEDULING**

A. Sequence installation of restoration system with related units of work specified in other sections to ensure that roof assemblies including roof accessories, flashing, trim and joint sealers are protected against damage from effects of weather, corrosion and adjacent construction activity.

B. Fully complete all roofing field assembly work each day. Phased construction will not be accepted.

1.11 **WARRANTIES AND GUARANTEES**

A. Upon completion of installation, and acceptance by the Owner and Architect, the manufacturer shall supply to the Owner a 10 (5+5) year watertightness warranty.
   1. Manufacturer annual site visits during warranty period, with maintenance recommendations, no charge.
   2. Manufacturer (not contractor or consultant) leak response.
   3. No “Blanket Voiding” for storm events.
   4. No “Blanket Voiding” for lack of Owner maintenance or log.
   5. No more than one required inspection and renewal period.
6. No exclusion for improper roof design or construction.
7. No exclusion for manufacturer’s own site inspections.
8. A single manufacturer/warrantor shall be utilized for all Membrane, Metal and Masonry Restorations and Replacements. Warranties from multiple Manufacturers are not acceptable.
9. Standard manufacturer's warranty shall be amended to require that the Laws of the State of Alabama shall govern all such warrantees and guarantees.

B. Contractor will submit a five year warranty using Alabama Building Commission form as specified.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. When a particular trade name or performance standard is specified it shall be indicative of a standard required.

B. Provide products as manufactured by Garland, Ecology or Hyload.

C. Approved manufacturer must comply in all respects as to the quality and technical performance of the products specified.

2.2 FLUID APPLIED RESTORATION SYSTEM

A. Modified Membrane Top Ply Field/ Modified Membrane Top Ply Flashing, for asphalt roofs:

1. Properties: Finished Membrane, ASTM D-5147 at 2 in/min. @ 73.4 ± 3.6°F.
   a. Tensile Strength MD and XD 310 lbf/in.
   b. Tear Strength MD and XD 500 lbf/in.
   c. Low Temperature Flexibility Passes -30 °F

B. High build multi-purpose solvent-based liquid waterproofing membrane designed to maintain, restore and upgrade the performance of existing smooth-surface bituminous membranes. Note that acrylic or water-based products are not allowed.

1. Viscosity @ 77F 16-20 sec
2. Density @ 77F 7.9 lbs/gal
3. Asphalt Content (ASTM D4479) 62%
4. Accelerated Weathering Test (Q-UV, UVB-313) Passes 2,000 hrs. exposure
5. Coverage Rate Wet Film Thickness Dry Film Thickness
   4.0 gal / poly / 3.5 gal 123 mils (64/11/56) 100 mils

C. Polyester: Continuous reinforcement to repair cracks, seams and joints, used in conjunction with coating.

1. Elongation (ASTM D 1682) 44%
2. Tearing Strength (ASTM D 1682) 17 lbs
3. Tensile 75 lbs.
4. Weight 3 oz/sq. yd
D. Asphaltic Primer
1. Viscosity Zahn Cup (ASTM D-4212) 18-21 sec
2. Distillation (ASTM D-402)
   a. Volume @ 380 F 55%
   b. Penetration of Residue mm/10 10-30
3. Wet Film Thickness 8-16 mils

E. Asphalt Mastic: Asphalt mastic for membrane interply adhesive for field and flashings.
1. Density @ 77F ASTM D-1475 8.3 lb./gal
2. Viscosity @ 77F Mobilometer 1500g 7 sec
3. Pre/Post Recycled Content 5.6%

F. SBS Asphalt Mastic: Asphalt mastic for plumbing joint reinforcement and critical areas.
1. Elongation ASTM D-412 800%
2. Density @ 77F ASTM D-1475 8.25 lb./gal
3. Viscosity @ 77F Brookfield #7 500,000 cP

G. Fiberglass Mesh: Fabric reinforcement for mastics, six inch (6”) width.
1. Tensile Strength Warp Threads 75 min.
2. Moisture Treatment, % of moisture free fabric 15%
3. Thread Count per 1 inch Filling Threads 10 +/-1
4. Thickness 8 mils

H. Reflective Asphalt Mastic: Aluminized asphalt mastic for all exposed surfaces, meeting the following requirements [“roof cement” coated with granules or aluminum is not allowed].
1. Reflectivity 60%
2. Density ASTM D-1475 8.3 lb./gal
3. Viscosity @ 77F Mobilometer 1500g 9-11 sec
4. Pre/Post Recycled Content 5.0%

I. Reflective Aluminum Coating
1. Density ASTM D 1475 8.51 lbs/gal.
2. Non-Volatile ASTM D 2824 45%
3. Wet Film Thickness 2 gal/sq 32 mils
4. SRI-Initial 77

2.3 MISCELLANEOUS

A. Carbon Filters MERV-8, 1-2 layers.

B. Drain Strainers; cast-iron or epoxy-coated aluminum, except that all strainers must be either one or the other, no mixing.

2.4 SHEET METAL

A. Metal Counterflashing Skirts; G-90 Kynar Steel, 24 ga minimum.

B. Plumbing Vent Boots (ASTM B-29) 4 lbs sq/ft. Desilverized Pig Lead

PART 3 - EXECUTION

3.1 EXAMINATION
Fluid Applied Roof Restoration Project for
Thompson Middle School and Creek View Elementary School for the
Alabaster City Board of Education
Alabaster, Alabama

FLUID APPLIED RESTORATION FOR
MODIFIED BITUMEN ROOFING
07540-6

MCKEE PROJECT NO. 2020.140

[Revised 6.11.20]
A. Examine substrate surfaces to receive liquid-applied membrane and associated work and conditions under which roofing will be installed. Do not proceed with roofing until unsatisfactory conditions have been corrected in a manner acceptable to Installer.

B. Review ASTM C-1153 moisture scan report with Architect and Manufacturer onsite.

### 3.2 GENERAL INSTALLATION REQUIREMENTS

A. Cooperate with manufacturer, inspection and test agencies engaged or required to perform services in connection with installing the roof system.

B. Protect other work from spillage of roofing materials and prevent materials from entering or clogging drains and conductors. Replace or restore other work damaged by installation of the modified bituminous roofing system.

C. Properly prepare and apply manufactured components and products, in strict accordance with each manufacturer’s current written instructions and recommendations.

D. Apply roofing materials as specified herein unless recommended otherwise by manufacturer’s current written instructions and recommendations. Keep roofing materials dry during application. Do not permit phased construction.

### 3.3 PROTECTION

A. Protect Parking Lots, Sidewalks and Perimeter Mansards from drippage and staining.

B. Contractor is to take photographs of all existing staining and drippage to Parking Lots, Sidewalks and Perimeter Mansards and provide to Architect prior to beginning the Work. All stains not shown by prior photograph will be removed at Contractor’s expense.

C. Cover HVAC intakes (wall and roof) with one to two layers of carbon filter wrap in all areas where paint and coating fumes may enter the interior. Take care to ensure filter wrap does not overly restrict air intake to cause duct damage. Coordinate with owner each day to ensure nearby windows and doors will remain shut during roofing operations.

### 3.4 LEAD PLUMBING BOOTS

A. Install new 4lb lead boot inserts, c-clamped to existing pipe.

### 3.5 BLISTER REPAIRS

A. Manufacturer is to mark all defect locations with orange paint prior to beginning with coating application.

B. Cut out unbonded membrane areas.

C. Apply approved asphalt primer.

D. Apply one-ply cold process modified bitumen membrane, laps surfaced with granules.

### 3.6 WET INSULATION
A. Replace wet insulation and roof membranes where indicated in moisture scan.

3.7 DRAIN REPAIR

A. Contractor is responsible for verifying all drains are clear of obstructions and fully functional.
B. Remove strainer, save for re-use.
C. Apply sealant grade SBS Mastic underneath lead flashing at drain bowl.
D. Install new drain strainers for all broken or missing strainers. Re-use existing strainers in good condition.
E. Plumbing Joint at Bowl-at-Pipe;
   1. Wire brush loose joint materials.
   2. Clean with water.
   3. Prime with asphalt primer.
   4. Seal Joint with SBS Mastic and Fiberglass Mesh.

3.8 MEMBRANE FLASHING

A. Repair unbonded Membrane Flashings where required by Manufacturer for Warranty.
B. Reinforce all membrane flashing side laps with aluminized asphalt mastic reinforced with fiberglass mesh.
C. Paint vertical membrane flashings with two coats manufacturer’s aluminum coating at one-half (½) gallon per square, per coat.

3.9 METAL EDGE

A. Apply asphalt primer, seal leading edge of membrane stripping plies with SBS mastic.

3.10 LEAD PLUMBING BOOTS

A. Install new 4lb lead boot inserts, c-clamped to existing pipe.

3.11 NEW METAL COUNTERFLASHING

A. HVAC Units; install new metal skirts fastened through top of membrane flashing at eight inches (8”) oc.
B. Install new surface mount metal counterflashings where indicated on plans, and where required by manufacturer.

3.12 FLUID-APPLIED MEMBRANE APPLICATION

A. Move and reset all unattached piping to allow cleaning and coating system application underneath.
B. Clean the entire roof and cladding by removing all dirt, algae, paint, oil, talc, rust or foreign substance. Scrub heavily soiled areas with a brush. Allow roof to dry before continuing.
C. Apply primer throughout roof.

D. Apply Base Coat throughout Field and Flashing at three and one-half (4.0) gallons per square.

E. Apply continuous polyester reinforcement throughout roof system.

F. Apply Top Coat throughout Field and Flashing at three and one-half (3.5) gallons per square.

G. Surfacing; Broadcast ceramic granules into wet coating at sixty (60) pounds per square. Sweep all loose granules on roof and in gutters and grounds, and discard.

3.13 FINAL INSPECTION

A. At completion of roofing installation and associated work Contractor shall schedule meeting with Architect, Owner, and roofing system manufacturer’s representative.

B. All parties shall tour roof work areas and provide punch list to Contractor of areas (if any) needing repair or replacement.

C. Contractor shall repair or replace deteriorated or defective work found at time of above inspection as required to produce an installation which is free of damage, and in compliance with specification and warranty requirements.

D. Contractor shall notify the Architect and Manufacturer’s Representative upon completion of corrections and schedule a final inspection.

E. Following the final inspection, Manufacturer shall provide written notice of acceptance of the installation for warranty.

END OF 07540 - FLUID APPLIED RESTORATION FOR MODIFIED BITUMEN ROOFING
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This is the Pre-Bid Meeting for the above listed job. People present are listed below:

Location: Alabaster, Alabama
Owner: Alabaster City Board of Education
Project: Field Applied Root Reflection Project for TMS & Creek View ES
Architectural #: 2020-440
Date: June 18, 2020

Sign in Sheet

McKee and Associates

614 South Hill Street - Montgomery, Alabama 36104 - Telephone (334) 834-9933