

Addendum

No. ONE Date: 3.7.19

Project:

Re-Roofing the
Carlisle Elementary School for the
Etowah County Schools
Gadsden, Alabama

MCKEE PROJECT NO. 19-124

A1.1 GENERAL MODIFICATIONS:

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.

A1.2 SPECIFICATION MODIFICATIONS:

- A. Refer to **Section 07500, Membrane Roofing (Revised 3.7.19)**, herein.

A1.3 DRAWING MODIFICATIONS: NONE

END OF ADDENDUM ONE

SECTION 07500 – MEMBRANE ROOFING (Revised 3.7.19)

PART 1 – GENERAL

RELATED DOCUMENTS:

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

DESCRIPTION

The roofing contractor shall be fully knowledgeable of all requirements of the contract documents and shall make themselves aware of all job site conditions prior to the bid that will affect their work.

Provide all labor, material, tools, equipment, and supervision necessary to furnish and install a **50** mil white reinforced **PVC** (polyvinyl chloride) membrane.

Existing Decking and Roof:

1. Modified Bitumen over Lightweight Concrete/EPS Insulation and Metal Deck.
2. Built-up Gravel over Perlite and Metal Deck.

Execution of Existing Roof:

1. Existing roof to remain.
 - a. Power broom or vacuum/sweep existing roofing surfaces of loose gravel and/or debris as required for new roofing system.
2. Remove existing roof drains and patch penetrations as required.

Execution of New Roof as follows:

1. **Roofing membrane and associated materials shall be provided by Owner and installed by Contractor for the TIPS Co-Op approved program.**
 - A. The Contractor shall provide a required materials list to the owner within 48 hours after bid opening. All required materials will be coordinated between the contractor and the owner's material supplier. After materials and quantities supplied by the owner are confirmed, any and all costs for additional required materials will be the responsibility of the General Contractor. Any materials remaining after completion of project belong to the owner.
 - B. The roofing system must be installed by an applicator certified, authorized and trained by the "**Duro-Last**" manufacturer in compliance with shop drawings as approved by the Architect /owners representative.
 - C. Membrane and Associated materials provided by the owner through the TIPS Co-Op program and installed by the contractor shall include insulation, cover board, membrane, screws, plates, caulking and sealants, edge detail terminations, gutters, down spouts and related accessories, metal fascia, soffit, bonding adhesives, flashings, and skylights. Flashings are limited to stacks, vents, hubs, drains, and pitch pans.

- D. All Freight costs shall be by the General Contractor and included in the contractor's bid proposal.
 - E. All wood nailers, blocking and/or decking replacement shall be provided and installed by the General Contractor and included in the contractor's bid proposal.
 - F. Any painting of gas lines shall be provided and installed by General Contractor and included in the contractor's bid proposal.
 - G. Any required guardrail fall protection shall be provided and installed by General Contractor and included in the contractor's bid proposal.
 - H. Any and all required insurance on all stored materials, owner furnished and contractor furnished, shall be provided by General Contractor and included in the contractor's bid proposal.
2. Lay and fit one (1) layer of Tapered EPS insulation with ½" start on 1/8" slope.
 3. Lay and fit one (1) layer of 100 psi. ISO SecureShield HD board over the EPS insulation.
 4. Mechanically attach the HD Board and the tapered EPS insulation to existing roof system in accordance with the manufacturer's most current specifications, details and requirements.
 5. Mechanically attach the 50 mil white reinforced PVC membrane in accordance with the manufacturer's most current specifications, details and requirements.
 6. Install **50** mil PVC membrane flashings and associated metal components as required.
 7. Provide the following Warranties:
 - a. Provide a **20-year** NDL manufacturer's warranty.
 - b. Provide a **5-year** General Contractor's Roofing Guarantee workmanship warranty found in Contract Forms section of this manual.
 8. The Contractor shall install all new fascia, drip edge, gutters and downspout per drawings and specifications.

SUBMITTALS

Prior to starting work, the roofing contractor must submit the following:

1. Shop drawings showing layout of insulation, details of construction and identification of materials.
2. Sample of the manufacturer's Membrane System Warranty.
3. Submit a letter of certification from the manufacturer which certifies the roofing contractor is authorized to install the manufacturer's roofing system.
4. Certification of the manufacturer's warranty reserve.

Upon completion of the installed work, submit copies of the manufacturer's final inspection to the specifier prior to the issuance of the manufacturer's warranty.

PRODUCT DELIVERY, STORAGE, AND HANDLING

Deliver materials to the job site in the manufacturer's original, unopened containers or wrappings with the manufacturer's name, brand name and installation instructions intact and legible. Deliver in sufficient quantity to permit work to continue without interruption. Comply with the manufacturer's written instructions for proper material storage.

1. Store the **PVC** membranes in the original undisturbed plastic wrap in a cool, shaded area and cover with light-colored, breathable, waterproof tarpaulins. Thermoplastic membrane that has been exposed to the elements for approximately seven (7) days must be prepared with appropriate cleaner prior to hot air welding.

2. Store curable materials (adhesives and sealants) between 60°F and 80°F in dry areas protected from water and direct sunlight. If exposed to lower temperature, restore to 60°F minimum temperature before using.
3. Store materials containing solvents in dry, well ventilated spaces with proper fire and safety precautions. Keep lids on tight. Use before expiration of their shelf life.
4. Insulation must be on pallets, off the ground and tightly covered with waterproof materials.
5. Any materials, which are found to be damaged, shall be removed and replaced at the applicator's expense.

WORK SEQUENCE

Schedule and execute work to prevent leaks and excessive traffic on completed roof sections. Care should be exercised to provide protection for the interior of the building and to ensure water does not flow beneath any completed sections of the membrane system.

Do not disrupt activities in occupied spaces.

JOB SITE PROTECTION

The roofing contractor shall adequately protect building, paved areas, service drives, lawn, shrubs, trees, etc. from damage while performing the required work. Provide all materials as necessary for protection and remove protection material at completion. The contractor shall repair or be responsible for costs to repair all property damaged during the roofing application.

During the roofing contractor's performance of the work, the building owner will continue to occupy the existing building. The contractor shall take precautions to prevent the spread of dust and debris, particularly where such material may sift into the building. The roofing contractor shall provide labor and materials to construct, maintain and remove necessary temporary enclosures to prevent dust or debris in the construction area(s) from entering the remainder of the building.

Do not overload any portion of the building, by either use of or placement of equipment, storage of debris, or storage of materials.

Protect against fire and flame spread. Maintain proper and adequate fire extinguishers. Take precautions to prevent drains from clogging during the roofing application.

Remove debris at the completion of each day's work and clean drains, if required. At completion, test drains to ensure the system is free running and drains are watertight. Remove strainers and plug drains in areas where work is in progress. Install flags or other telltales on plugs. Remove plugs each night and screen drain.

Store moisture susceptible materials above ground and protect with waterproof coverings.

Remove all traces of piled bulk materials and return the job site to its original condition upon completion of the work.

SAFETY

The roofing contractor shall be responsible for all means and methods as they relate to safety and shall comply with all applicable local, state, and federal requirements that are safety related. Safety shall be the responsibility of the roofing contractor. All related personnel shall be instructed daily to be mindful of the full time requirement to maintain a safe environment for the facility's occupants including staff, visitors, customers, and the occurrence of the public on or near the site.

WORKMANSHIP

Applicators installing new roof, flashing and related work shall be factory trained and approved by the manufacturer they are representing.

All work shall be of highest quality and in strict accordance with the manufacturer's published specifications and to the building owner's satisfaction.

There shall be a supervisor on the job site at all times while work is in progress.

QUALITY ASSURANCE

The roofing contractor shall be fully knowledgeable of all requirements of the contract documents and shall make themselves aware of all job site conditions prior to the bid that will affect their work.

The Contractor will provide an approved and certified independent third party inspection firm. The inspection firm will 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 manufacturers warranty**.

Recognized approved independent firms will consist of:

1. Hixson Consultants, Inc.,
947 1st Avenue West,
Alabaster, AL. 35007
(205) 663-2220, attention Mr. Tyler Hixson
2. Roof Asset Management, Inc.
David Lee
4950 Woodfield Drive
Millbrook, Alabama 36054
(334) 590-7999

The Contractor shall provide signed certification from the Roofing Manufacturer that the roof design provided for this project complies with the performance requirements as set forth by applicable applications in IBC Chapter 15, Section 1504.

1. The certification shall be attached to the Roof Warranty provided at the close out of the project.
2. Contractor shall submit a copy of his Manufacturer's Warranty Notification prior to purchase of materials and start of work.

Roof system will meet the requirements of all federal, state and local code bodies having jurisdiction.

The PVC membrane roofing system must achieve a UL Class A and the appropriate FM rating.

Unless otherwise noted in this specification, the roofing contractor must strictly comply with the manufacturer's current specifications and details.

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.

Drainage: Provide a roof system with positive drainage where all standing water dissipates within 48 hours after precipitation ends.

All roof curbs and penetrations shall have a minimum height of 8" above the completed roof system.

Roof curbs shall be installed in accordance with roofing system manufactures instructions. Unless otherwise noted in this specification, the roofing contractor must strictly comply with the manufacturer's current specifications and details.

The roofing system must be installed by an applicator certified, authorized and trained by the "Duro-Last" manufacturer in compliance with shop drawings as approved by the Architect /owners representative.

Provide adequate number of experienced workers regularly engaged in this type of work who are skilled in the application techniques of the materials specified. Provide at least one thoroughly trained and experienced superintendent on the job at all times roofing work is in progress.

There shall be no deviations made from this specification or the approved shop drawings without the prior written approval of the Architect. Any deviation from the manufacturer's installation procedures must be supported by a written certification on the manufacturer's letterhead and presented for the Architects consideration.

Upon completion of the installation, the applicator shall arrange for an inspection to be made by a non-sales technical representative of the membrane manufacturer in order to determine whether corrective work will be required before the warranty will be issued. Notify the Architect and General Contractor seventy-two (72) hours prior to the manufacturer's final inspection.

JOB CONDITIONS, CAUTIONS, AND WARNINGS

Material Safety Data Sheets (MSDS) must be on location at all times during the transportation, storage, and application of materials.

When positioning membrane sheets, exercise care to locate all field splices away from low spots and out of drain sumps. All field splices should be shingled to prevent bucking of water.

When loading materials onto the roof, the Authorized Roofing Applicator must comply with the requirements of the building owner to prevent overloading and possible disturbance to the building structure.

Proceed with roofing work only when weather conditions comply with the manufacturer's recommended limitations, and when conditions will permit the work to proceed in accordance with the manufacturer's requirements and recommendations.

Proceed with work so new roofing materials are not subject to construction traffic. When necessary, new roof sections shall be protected and inspected upon completion for possible damage.

Provide protection, such as 3/4 inch thick plywood, for all roof areas exposed to traffic during construction. Plywood must be smooth and free of fasteners and splinters.

The surface on which the insulation or roofing membrane is to be applied shall be clean, smooth, dry, and free of projections or contaminants that would prevent proper application of or be incompatible with the new installation, such as fins, sharp edges, foreign materials, oil and grease.

New roofing shall be complete and weather tight at the end of the workday.

Contaminants such as grease, fats, and oils shall not be allowed to come in direct contact with the roofing membrane.

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 to the General Contract and the Owner.

WARRANTY

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.

Provide manufacturer's 20-year NDL total system warranty covering both labor and material with no dollar limitation and cover all penetrations.

General Contractor shall provide the General Contractor's 5 year Roofing Guarantee included in this manual.

Pro-rated system warranties shall not be accepted.

Evidence of the manufacturer's warranty reserve shall be included as part of the project submittals for the specifier's approval.

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

The roof insulation shall be covered under the roof warranty as required by the manufacturer.

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 manufacturer 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.

PART 2 – PRODUCTS

GENERAL

All components of the specified roofing system shall be products of the manufacturer of

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FOR THE ETOWAH COUNTY SCHOOLS
GADSDEN, ALABAMA

MEMBRANE ROOFING
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the roofing system or accepted by the manufacturer as compatible. All products (including insulation, fasteners, fastening plates and edgings) must be manufactured and supplied by the roofing system manufacturer and covered by the warranty.

ADHESIVES AND CLEANERS

All products shall be furnished by the roofing manufacturer and specifically formulated for the intended purpose.

1. Bonding Adhesive: **50 Mil**: Manufactures recommended Bonding Adhesive
2. Edge Sealant: Cut Edge Sealant
3. Sealer: Water Cut-Off Mastic
4. Pocket Sealant: Manufactures recommended Molded Pocket Sealant
5. Cleaner: Manufactures recommended Membrane Cleaner

The Contractor shall be responsible for ensuring all existing curbs / flashings shall be raised as necessary to ensure proper flashing heights.

PART 3 – EXECUTION

GENERAL

Comply with the manufacturer's published instructions for the installation of the membrane roofing system including proper substrate preparation, jobsite considerations, and weather restrictions.

Position sheets to accommodate contours of the roof deck and shingle splices to avoid bucking water.

INSULATION PLACEMENT AND ATTACHMENT

Install insulation or membrane underlayment over the substrate with boards butted tightly together with no joints or gaps greater than 1/4 inch. Stagger joints both horizontally and vertically if multiple layers are provided.

Secure insulation to the substrate with the required fasteners and plates in accordance with manufacturers specifications.

50 Mil PVC MEMBRANE PLACEMENT AND ATTACHMENT

1. Unroll and position membrane without stretching. Provide and secure both perimeter and field membrane sheets in accordance with the manufacturer's most current specifications and details.
2. Secure the membrane with the required Fasteners and Plates spaced as required per the manufacturer's requirements to meet the appropriate up-lift.
3. Install adjoining membrane sheets in the same manner in accordance with the manufacturer's specifications.
4. Hot air weld the membrane using an Automatic Hot Air Welding Machine or Hot Air Hand Welder in accordance with the manufacturer's specifications. At all splice

intersections, roll the seam with a silicone roller prior to membrane seam cooling. All splice intersections shall be overlaid with membrane non-reinforced flashing

5. Probe all seams once the hot air welds have thoroughly cooled (approximately 30 minutes).
6. Repair all seam deficiencies the same day they are discovered.
7. Apply Cut Edge Sealant on all cut edges of reinforced membrane (where the scrim reinforcement is exposed) after seam probing is complete.

FLASHING

Flashing of parapets, curbs, expansion joints and other parts of the roof must be performed using PVC reinforced membrane. Non-reinforced membrane can be used for flashing pipe penetrations, Sealant Pockets, scuppers, as well as inside and outside corners when the use of pre-fabricated accessories is not feasible.

Follow manufacturer's typical flashing procedures for all wall, curb, and penetration flashing including metal edging/coping and roof drain applications.

WALKWAYS

Install walkways at all traffic concentration points (such as roof hatches, access doors, rooftop ladders, etc.) and all locations as identified on the drawings.

Hot air weld walkway pads to the membrane in accordance with the manufacturer's specifications.

DAILY SEAL

On phased roofing, when the completion of flashings and terminations is not achieved by the end of the workday, a daily seal must be performed to close temporarily the membrane to prevent water infiltration.

Complete an acceptable membrane seal in accordance with the manufacturer's requirements.

CLEAN UP

Perform daily clean up to collect all wrappings, empty containers, paper, and other debris from the project site. Upon completion, all debris must be disposed of in a legally acceptable manner.

Prior to the manufacturer's inspection for warranty, the applicator must perform a pre-inspection to review all work and to verify all flashing has been completed as well as the application of all caulking.

END OF SECTION