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.

A2.1 GENERAL MODIFICATIONS:
   A. NONE

A2.2 SPECIFICATION MODIFICATIONS:
   A. Refer to Section 07540, Fluid Applied Restoration for Modified Bitumen Roofing [Revised 6.23.20], herein.
   B. Refer to Section 07544, Fluid Applied Restoration for Gravel Built Up Roofing [Revised 6.23.20], herein.

A2.3 DRAWING MODIFICATIONS:
   A. NONE

A2.4 CLARIFICATIONS & RESPONSES:
   A. NONE

END OF ADDENDUM
SECTION 07540 - FLUID APPLIED RESTORATION FOR MODIFIED BITUMEN ROOFING
[Revised 6.23.20]

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 Warp Threads 20 +/-1 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

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.

1. **Roof Drain Bowls:**

   The General Contractor shall remove all existing roof drain strainer caps and save for re-use. The General Contractor shall verify the existing drain line is clear prior to the installation of the strainer caps per roof drain inspection, testing and verification procedures.

2. **Roof drain inspection, testing and verification:**

   a. Prior to work start, the contractor shall obtain the services of a licensed plumber. Verify that primary roof drains, overflow roof drains, and plumbing vents located within the project area are free of debris and properly functioning. The plumber shall perform a flood test of existing roof drains located in the project areas. The flood test shall include testing of existing roof drain bowls and connections to piping by temporarily plugging the drain pipe below the existing connection and flooding the drain bowl to its top edge. Notify the Architect immediately if defects are found in the roof drain bowl and/or roof drain assembly components, or if the roof drains and/or plumbing vents are found to be blocked, clogged, or otherwise not properly functioning. Plumbing work necessary to correct identified defects, and clear existing roof drains and vents shall be performed by a licensed plumber at the direction of the Architect. Prior to construction start, the contractor shall provide a letter to the Owner indicating this work has been completed, detailing the results of this roof drain inspection and testing, and identifying any corrective action needed.

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 counterflashimg 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 a 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
SECTION 07544 - FLUID APPLIED RESTORATION FOR GRAVEL BUILT UP ROOFING [Revised 6.23.20]

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/deteriorated deck, insulation and membrane roof materials. Repair all metal edges per manufacturer’s requirements. Provide new membrane flashings, sheet metal flashings where specified, and drain repairs. Provide preparation then fluid applied restoration system for field and flashings, for gravel built up roof.

1.3 SYSTEM DESCRIPTION
A. It is the intent of this specification to install a long-term liquid-applied roof system that meets or exceeding 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. Submit Product Data Sheets for each type of product specified.

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

F. Provide a sample of each product.

G. Unexecuted Manufacturer's warranty.

H. Certified copy of ISO 9001 compliance.
I. 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.

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 existing roof membranes, 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 liquid 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 their 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 warranties 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. Surfacing; ASTM D-1863, #6 sieve, River Rock (light brown pea gravel, not slag), washed.

B. Asphalt Roof Sections; Polymer modified, solvent based fluid applied coal tar waterproofing adhesive for interply and floodcoat. Acrylic or water-based products are not allowed.
   1. Viscosity @ 77F 20-25 sec
   2. Density @ 77F 9.1 lbs/gal
   3. Asphalt Content (ASTM D4479) 63%
   4. Coverage Rate Wet Film Thickness Dry Film Thickness
      7.0 gal 114 mils 71 mils

C. 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%

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. Coal Tar Roof Sections; Polymer modified, solvent based fluid applied asphalt waterproofing adhesive for interply and floodcoat. Acrylic or water-based products are not allowed.
   1. Viscosity, Stormer Viscometer, 600g 125-175 sec
   2. Density @ 77F 9.4 lbs/gal
   3. Asphalt Content (ASTM D4479) 63%
   4. Coverage Rate Wet Film Thickness Dry Film Thickness
      7.0 gal 112 mils 86 mils

F. Coal Tar Mastic: Coal tar trowel grade polymer modified non-sag mastic, interply adhesive for flashings.
   1. Density@ 77F ASTM D-1475 9.7 lb./gal
   2. Viscosity @ 77F Brookfield Hpath 1-1.5 mm
   3. Pre/Post Recycled Content 70%

G. Coal Tar Primer: quick drying coal tar primer for adhesion to metal, masonry and coal tar membranes.
   1. Non-Volatile (ASTM D-2369) 35-75 sec
   2. Density @77F 9.1 lbs/gal
      a. Volume @ 380 F 55%
      b. Penetration of Residue mm/10 10-30
   3. Wet Film Thickness 8-16 mils

H. Glasbase Sheet; ASTM D4601, Type II, 75#, per manufacturer approval.

I. Modified Membrane Base Ply Field/ Modified Membrane Base Ply Flashing, for asphalt and coal tar roofs:
   1. Properties: Finished Membrane, ASTM D-5147 at 2 in/min. @ 73.4 ± 3.6° F.
      a. Tensile Strength MD and XD 225 lbf/in.
      b. Tear Strength MD and XD 300 lbf/in.
      c. Low Temperature Flexibility Passes -30 °F

J. Modified Membrane Field Top Ply/Modified Membrane Flashing Top Ply, for asphalt and coal tar roofs, granular surface where exposed to UV:
   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

K. Self-adhering high temperature underlayment with cross-laminated polymer film laminated to a high temperature rubberized asphalt adhesive, with release film.
1. Exposure 90 days
2. Installation Temperatures 50F-100F
3. Thickness 45 mils
4. Vapor Permeance ASTM E96 <0.02
5. Flexibility @ -20F ASTM D1970 Pass
6. Tensile Strength ASTM D1970 32 lbs/in
7. Maximum Temperature 250F

L. 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

M. 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%

N. 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 Warp Threads 20 +/-1 Filling Threads 10 +/-1
4. Thickness 8 mils

O. Liquid Flashing: Two-part asphaltic polyurethane low-odor.
1. Solids by Volume 86%
2. Tensile Strength ASTM D-412 650 psi
3. Elongation ASTM D-412 325%
4. Density@ 77F ASTM D-1475 8.3 lb./gal

P. Polyester Fabric; reinforcement for liquid flashing.
1. Tensile Strength ASTM D-3786 57.1 lb./gal
2. Tear Strength ASTM D-3786 17.4 lbs
3. Elongation ASTM D-3786 44.25%

Q. Coating for Metal Roof
1. Base Coat
   a. Color: Gray
   b. Base: Solvent
   c. Elongation (ASTM D-412) 320%
   d. Tensile Strength (ASTM D-412) 2100 psi
2. Top Coating
   a. Color: White
   b. Base: Solvent
   c. Elongation (ASTM D-412) 320%
   d. Tensile Strength (ASTM D-412) 2100 psi
   e. SRI: 111

R. Sealant; elastomeric adhesive modified silane sealant.
2.3 SHEET METAL

A. Metal Edge, where indicated; G-90 Kynar Steel, 24 ga minimum.
B. Coping, where indicated; G-90 Kynar Steel, 24 ga minimum.
C. Expansion Joint Caps; G-90 Kynar Steel, 24 ga minimum.
D. Coping Cover Plates; G-90 Kynar Steel, 24 ga minimum.
E. Overflow Scuppers & Faceplates; G-90 Kynar Steel, 24 ga minimum.
F. Continuous cleats, where indicated; G90 galvanized steel, 22 ga. minimum.
G. ANSI-SPRI ES-1 compliant.
H. Drain Flashings 30” x 30” 26 ga zinc sheet
I. Plumbing Vent Boots (ASTM B-29) 4 lbs sq/ft. Desilverized Pig Lead

2.4 DECK REPAIR MATERIALS

A. “Zono-Patch” by Siplast, “Securock Gypsum-Concrete Patch” by USG, or equal.

2.5 WOOD

A. Lumber: Pressure-treated ACQ, no warps, matching thickness of adjacent insulation.
B. Plywood: Exterior grade, CDX.

2.6 EXPANSION JOINTS

A. Field & Wall;
   1. Low profile “bellows” type expansion joint with 3ply EPDM with closed cell foam backing.
   2. Bellows double-locked to galvanized steel flanges.
   3. EPDM, .045 mil, insulation retainer.
   4. Fiberglass batt insulation; thickness to provide snug fit.
   5. Fully covered under restoration manufacturer's warranty.

2.7 NAILS & FASTENERS

A. Membrane to Wood; 1.0” integral steel cap head nails.
B. Sheet Metal to Wood, Imbedded; 3/8” head, #10, 1-1/4” length, hot-dip galvanized.
C. Sheet Metal to Wood, Exposed; #12-14 HWH Sheet Metal Screw with neopreme washer, 1-1/4” length, hot-dip galvanized or FM coating.
D. Wood to Concrete; Drive Pins, Expansion Fasteners, Rawl Spikes or Tapcons, minimum 1-1/4” imbedment.
E. Wood to Wood; #12 FM coated screws, minimum 1-1/4” imbedment in lumber or minimum length to provide through-penetration in plywood.
F. Insulation Screws; #14 FM coated, 3.0” plates, minimum length to provide through-penetration in plywood and 1-1/2” penetration into steel decks.

2.8 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.

PART 3 - EXECUTION

3.1 EXAMINATION
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 DECK & ROOF REPAIR
A. Provide 6 mil plastic interior protection to catch all debris. Sweep clean at the end of each day.
B. Install new 22ga matching profile steel deck, attached to bar-joists at 12” oc.
C. Install specified lightweight concrete repair material.
D. Mechanically fasten Glasbase sheet per manufacturer’s instructions and code compliance.
E. Install specified Modified Membrane Base and Top Ply.
F. Install specified floodcoat and gravel surfacing.

3.5 **BLISTER REPAIRS**
A. After gravel removal, 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 two-ply specified base sheet in asphalt mastic, edges troweled smooth.

3.6 **EXISTING FIELD MEMBRANE REPAIRS**
A. Spud eighteen inches (18") on each side of existing repair.
B. Cut out unbonded portions of existing repairs (preferably remove the entire repair sheet).
C. Prime repair area and tie-in with asphalt primer at three quarter (3/4) gallon per square.
D. Install one ply specified modified membrane base ply in cold process adhesive applied at two and one-half (2-1/2) gallons per square.
E. Install specified fluid applied floodcoat and gravel surfacing.

3.7 **DRAIN REPAIR**
A. Contractor is responsible for verifying all drains are clear of obstructions and fully functional.
   1. Roof Drain Bowls:
      The General Contractor shall remove all existing roof drain strainer caps and save for re-use. The General Contractor shall verify the existing drain line is clear prior to the installation of the strainer caps per roof drain inspection, testing and verification procedures.
   2. Roof drain inspection, testing and verification:
      a. Prior to work start, the contractor shall obtain the services of a licensed plumber. Verify that primary roof drains, overflow roof drains, and plumbing vents located within the project area are free of debris and properly functioning. The plumber shall perform a flood test of existing roof drains located in the project areas. The flood test shall include testing of existing roof drain bowls and connections to piping by temporarily plugging the drain pipe below the existing connection and flooding the drain bowl to its top edge. Notify the Architect immediately if defects are found in the roof drain bowl and/or roof drain assembly components, or if the roof drains and/or plumbing vents are found to be blocked, clogged, or otherwise not properly functioning. Plumbing work necessary to correct identified defects, and clear existing roof drains and vents shall be performed by a licensed plumber at the direction of the Architect. Prior to construction start, the contractor shall provide a letter to the Owner indicating this work has been completed, detailing the results of this roof drain inspection and testing, and identifying any corrective action needed.
      b. After completion of roof replacement work, the contractor shall again obtain the services of a licensed plumber. Verify that primary roof drains, overflow roof drains and plumbing vents located within the project area are free of debris and properly functioning. The
plumber shall perform a second flood test of existing roof drains located in the project areas. The flood test shall include testing of the new and/or existing roof drain bowls and connections by temporarily plugging the drain pipe below the existing connection and flooding the drain bowl to its top edge. Note any defects in the roof drain bowl. Continue to flood the roof drain, up and over the installed roof drain flashing. Note any leakage at the roof drain flashing. Notify the architect immediately if defects are found in the roof drain flashing, roof drain bowl and/or roof drain assembly components, or if the roof drains and/or plumbing vents are found to be blocked, clogged, or otherwise not properly functioning. Plumbing work necessary to correct identified defects, and clear existing roof drains and vents shall be performed by a licensed plumber at the direction of the architect. After construction completion, the contractor shall provide a second letter to the architect indicating this work has been completed, detailing the results of this roof drain inspection and testing, and identifying any corrective action needed.

B. Remove strainer, save for re-use.
C. Spud gravel in four foot (4’) by four foot (4’) area around drain.
D. Remove roof membranes and lead flashing to expose deck.
E. Mechanically fasten Glasbase sheet per manufacturer’s instructions and code compliance.
F. Install specified Modified Membrane Base and Top Ply.
G. Install zinc sheet flashing, primed, set in asphalt mastic applied at three (3) gallons per square.
H. Install fluid applied floodcoat and gravel surfacing.
I. Apply sealant grade SBS Mastic underneath lead flashing at drain bowl.
J. Install new drain strainers for all broken or missing strainers. Re-use existing strainers in good condition.
K. 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 METAL EDGE REPAIRS

A. Replace existing metal edge where indicated. Remaining existing metal edges to remain in place and receive new membrane stripping.
B. Mastic Application; apply asphalt/coal tar mastics at 2 gallons per square to substrate, then 1 gallon per square to back of sheet, allow 10 minute flash-off, then mate.
C. Spud eighteen inches (18”) of gravel adjacent to edge.
D. Remove existing membrane stripping plies.
E. Where indicated, remove and replace metal edge as follows;
   1. Remove existing Metal Edge and discard, leaving underlying felts and adjacent gutter in place.
   2. Apply asphalt/coal tar mastic at 4” width along roof edge at three (3) gallons per square, along the primed roof edge.
   3. Apply asphalt/coal tar primer to top side of new Metal Edge.
4. Set new Metal Edge in asphalt/coal tar mastic, nailed three inches (3") on center staggered.

F. Apply asphalt/coal tar primer along roof edge in an eighteen inch (18") width.

G. Install specified two layers of Base Ply imbedded in asphalt/coal tar mastic at three gallons per square per ply total, per ply.

H. Apply asphalt/coal tar mastic as a floodcoat at five (5) gallons per square, followed by gravel at five hundred fifty (550) lbs. per square.

3.9 NEW MEMBRANE FLASHING – COLD PROCESS

A. Spud existing gravel to sixteen inches (16") of the parapet wall.

B. Apply asphalt primer at three quarter (3/4) gallons per square.

C. Install specified two-ply membrane flashings in three foot (3') widths, staggered.

1. Mastic Application; apply asphalt mastics at 2 gallons per square to substrate, then 1 gallons per square to back of sheet, allow 10 minute flash-off, then mate.

2. Press in the membrane flashing plies along the base and top of cant strips to create a crease. Pat all remaining areas of the sheet into the substrate mastic.

3. Base Flashing Ply; length sufficient to provide 3" field lap beyond cant strip.

4. Top Flashing Ply; length sufficient to provide 6" field lap beyond cant strip.
   a. Reinforce side laps with aluminized asphalt mastic and fiberglass mesh.

5. Mechanically fasten tops of membrane flashing at eight inches (8") oc using drive pins, steel washers or cap-head nails.

6. Corners; stop one side at a miter cut, lap the other side three inches (3") and heat weld the lap.

7. Temporary Seals; seal tops of membrane flashing components at the end of each day with asphalt mastic.

8. Permanent Seal; seal top of completed membrane flashing with asphalt mastic and fiberglass mesh.

3.10 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 counterflashing where indicated on plans, and where required by manufacturer.

3.11 EXISTING COPING COVER PLATES

A. Fabricate and install new cover plates for all coping.

B. Apply two beads of sealant underneath each side of existing joint.

C. Engage cover plate into outside and inside hems.

D. Install one stainless steel pop rivet at the inside face.

3.12 COPING, Where Indicated

A. Install self-adhering membrane over top of wall.

B. Install continuous cleat to outside face.
C. Install new sheet metal coping, 6” max. fascia lengths.
D. Fabricate with three inch (3") lap joints, sealed with two (2) beads silane sealant
E. Mechanically fasten inside face at sixteen inches (16”) oc.

3.13  EXPANSION JOINTS

A. Raised Curb Expansion Joint
   1. Remove membranes and metal caps from all expansion joints.
   2. Install new membrane flashing as specified.
   3. Install new .045 mil EPDM insulation retainer.
   4. Install new fiberglass batt insulation, snug fit.
   5. Install continuous self-adhering membrane.
   6. Replace existing expansion joint cap with new.

B. Low Profile Expansion Joint, Field
   1. Remove membranes and metal caps from all expansion joints, leaving underlying membrane roof in place.
   2. Install new .045 mil EPDM insulation retainer.
   3. Install new fiberglass batt insulation, snug fit.
   4. Install new bellows expansion joints, flange primed, set in asphalt mastic.
   5. Install two ply membrane stripping.

C. Low Profile Expansion Joint, Curb
   1. Remove membranes and metal caps from all expansion joints, leaving underlying membrane roof in place.
   2. Install new .045 mil EPDM insulation retainer.
   3. Install new fiberglass batt insulation, snug fit.
   4. Install new bellows expansion joints, flange primed, set in asphalt mastic.
   5. Install two ply membrane stripping.
   6. Mechanically fasten vertical bellows-flange with appropriate fastener at 8” oc.

3.14  OVERFLOW SCUPPERS

A. Remove existing metal scupper and stripping membranes and metal caps from all overflow scuppers.
B. Fabricate new integral scupper box with flange, corners and box soldered.
C. Prime, set new scupper in asphalt mastic, mechanically fasten to wall where required to prevent movement underneath forthcoming stripping membranes.
D. Install new two ply membrane stripping.
E. Reinforce vertical corner intersections with aluminized mastic and fiberglass mesh.
F. Install silane sealant around four sides of scupper to wall intersection.
G. Install new face-plate, fastened at four corners.

3.15  LEAD PLUMBING BOOTS

A. Install new 4lb lead boot inserts, c-clamped to existing pipe.
3.16 **EXISTING WALK PADS**

A. Spud and remove existing walk pads.

B. Repair misc damaged roof areas with specified membranes.

C. Apply specified cold process floodcoat and gravel in lieu of walkpads.

3.17 **FLUID-APPLIED MEMBRANE APPLICATION**

A. Wet vacuum existing gravel from rooftop and dispose offsite.

B. Remove residual debris with blower and broom and dry-vacuum.

C. Replace wet insulation and membrane where indicated by moisture scan.

D. Remove existing and install new two-ply Membrane Flashings to primed substrate.
   1. Remove existing membrane flashings and cant strips.
   2. Install new cant strips set in manufacturer’s recommended adhesive.
   3. Install new specified 2ply modified membrane flashings.
   4. Install new metal skirt to slide behind existing counterflashings where needed, mechanically fastened 8” oc.
   5. Reinforce side laps using specified aluminumized asphalt mastic and fiberglass mesh.

E. Remove residual debris from repair operations with blower, broom and dry-vacuum.

F. Apply fluid applied floodcoat at seven (7.0) gallons per square.

G. Apply gravel surfacing at five hundred and fifty (550) pounds per square.

3.18 **METAL ROOF RESTORATION**

A. Pressure wash & scrub metal surfaces to remove scale and debris.

B. Fabricate and install new metal closures, new sealant all sides.

C. Apply Base Coat at two (2) gallons per square (32 wet mils) and allow to dry minimum two (2) days.

D. Apply Top Coat at two (2) gallons per square (32 wet mils) and allow to dry minimum two (2) days.

3.19 **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 SECTION