ADDENDUM #3

Roof Replacement at Two School Sites
Mulberry Elementary School – Cafeteria, Kitchen & Canopies
Orchard Date Elementary School – Cafeteria, Kitchen & Canopies

Bid No. 2010-01

Date: February 10, 2010

BIDS ARE DUE: WEDNESDAY, FEBRUARY 17, 2010
TIME: 11:00 A.M.
PLACE: EAST WHITTIER CITY SCHOOL DISTRICT
PURCHASING DEPARTMENT/WAREHOUSE
14535 WHITTIER BLVD.
WHITTIER, CA. 90605

The specifications for the Siplast Roof submitted with original bid have been eliminated in its entirely and have been replaced with the attached Revised Siplast Roof Specifications dated February 10, 2010.

All other terms and conditions of the bid remain the same.

Please sign and return this addendum with your bid document IF you are submitting a bid.

Company Name: _____

Authorized Signature: _____

Date: _____

Roofing Specification
For:

EAST WHITTIER CITY SCHOOL DISTRICT

REVISED: February 10,2010

Prepared by:
Siplast
1000 East Rochelle Blvd.
Irving, Texas 75062
(800) 922-8800

This specification is provided as a general guide for use of Siplast products based on the conditions observed as a result of the visual inspection of the above mentioned roof. This specification assumes the existence of "standard conditions" based on the conditions observed. There may be variations not detected in the visual inspection, hidden defects, or structural considerations which should be addressed. Siplast is strictly a manufacturer of roofing systems and has no experience, training or expertise in the areas of architecture or engineering or in the area of consulting with respect to matters related to such areas. Siplast recommends that the Owner independently verify the accuracy, adequacy and appropriateness of the specification provided.

Jan 3, 2009

ROOFING SPECIFICATION (Rev 9/2005)II

PART 1 GENERAL

1.01 GENERAL REQUIREMENTS

A. Deviations: In the event this Specification deviates from the manufacturer's current specification, this specification prevails, except where they conflict with the manufacturer's requirements for the specified guarantee. In this case, the manufacturer's specification prevails.

B. Specification Amendments: Drawings, addenda and modifications may be issued subsequent to the printing of this Specification.

C. Contractor Acceptance: Prior to the project start, ascertain that all aspects of this Specification and possible modifications are workable and do not conflict with the manufacturer's requirements for the specified guarantee. Upon commencement of the work, it will be presumed that this Specification and drawings, addenda and modifications are satisfactory to both the Contractor and the manufacturer in their entirety.

D. Supplied Materials: Supply all materials of the roofing system, including accessory products. The bidding Contractor, by making his bid, represents that his bid price is based on the use of the materials listed in Part 2 Products. Refer to Part 1.03 Description of Work for specific use within each roofing assembly outlined.

1.02 REFERENCE STANDARDS

References in these specifications to standards, test methods, and codes, are implied to mean the latest edition of each such standard adopted. The following is an abbreviated list of associations, institutions, and societies which may be used as references throughout these specifications.

ASTM	American Society for Testing and Materials Philadelphia, PA
FM	Factory Mutual Engineering and Research Norwood, MA
NRCA	National Roofing Contractors Association Rosemont, IL
OSHA	Occupational Safety and Health Administrations Washington, DC
SMACNA	Sheet Metal and Air Conditioning Contractors National Association Chantilly, VA
UL	Underwriters Laboratories Northbrook, IL

1.03 DESCRIPTION OF WORK

The basic work descriptions (components, layering and attachment methods) required in this specification are referenced below.

Project Type: Reroofing Specification #: 20S30 ISA-T

Deck: Wood Slope: 1/4 inch

Gypsum Sheathing Panel: DensDeck Prime by Georgia Pacific, having a thickness of 1/4 inch, mechanically attached.

Roof system: Paradiene 20 TS SA, adhered to the gypsum sheathing panel;

Veral Aluminum, torch applied.

Flashing system: Veral Aluminum, torch applied;

Parapro 123 Flashing System, applied according to Siplast specifications and standard details. Please note that all custom or non-standard details must be specifically reviewed and approved by Siplast prior to installation.

1.04 QUALITY ASSURANCE

A. Acceptable Products: Primary roofing products, including each type of sheet, all manufactured in the United States, shall be supplied by a single manufacturer which has been successfully producing the specified types of primary products for not less than 10 years. The primary roofing products shall have maintained a consistent composition for a minimum of five years.

B. Product Quality Assurance Program: Primary roofing materials shall be manufactured under a quality management system that is monitored regularly by a third party auditor under the ISO 9001:2000 audit process. A certificate of analysis for reporting/confirming the tested values of the actual material being supplied for the project will be required prior to project close-out.

C. Agency Approvals: The proposed roof system shall conform to the following requirements. No other testing agency approvals will be accepted.

1. Underwriters Laboratories Class A acceptance of the proposed roofing system (including mopping asphalt or cold adhesive) without additional requirements for gravel or coatings.

D. Acceptable Contractor: Contractor shall have a minimum of 2 years experience in successfully installing the same or similar roofing materials and be certified in writing by the roofing materials manufacturer to install the primary roofing products.

E. Scope of Work: The work to be performed under this specification shall include but is not limited to the following: Attend necessary job meetings and furnish competent and full time supervision, experienced roof mechanics, all materials, tools, and equipment necessary to complete, in an acceptable manner, the roof installation in accordance with this specification. Comply with the latest written application instructions of the manufacturer of the primary roofing products. In addition, application practice shall comply with requirements and recommendations contained in the latest edition of the Handbook of Accepted Roofing Knowledge (HARK) as published by the National Roofing Contractor's Association, amended to include the acceptance of a phased roof system installation.

F. Local Regulations: Conform to regulations of public agencies, including any specific requirements of the city and/or state of jurisdiction.

G. Manufacturer Requirements: Ensure that the primary roofing materials manufacturer provides direct trained company personnel to attend necessary job meetings, perform periodic inspections as necessary, and conducts a final inspection upon successful completion of the project.

1.05 GUARANTEE/WARRANTY

A. Roof Membrane Guarantee: Upon successful completion of the project, and after all post installation procedures have been completed, furnish the Owner with the Manufacturer's 20 year labor and materials membrane guarantee. The guarantee shall be a term type, without deductibles or limitations on coverage amount.

> Siplast 20 Year Roof Membrane Guarantee

1.06 SUBMITTALS

A. Submittals Prior to Contract Award:

1. Letter from the proposed primary roofing manufacturer confirming that the bidder is an acceptable Contractor authorized to install the proposed system.

2. Letter from the primary roofing manufacturer stating that the proposed application will comply with the manufacturer's requirements in order to qualify the project for the specified guarantee.

C. Submittals Prior to Project Close-out:

1. Certificate Of Analysis from the testing laboratory of the primary roofing materials manufacturer, confirming the physical and mechanical properties of the roofing membrane components. Testing shall be in accordance with the parameters published in ASTM D 5147 and ASTM D 6298* and indicate Quality Assurance/Quality Control data as required to meet the specified properties. A separate Certificate Of Analysis for each production run of material shall indicate the following information:

a) Material type
b) Lot number
c) Production date
d) Dimensions and Mass (indicate the lowest values recorded during the production run);
   - Roll length
   - Roll width
   - Selvage width
   - Total thickness
   - Thickness at selvage (coating thickness)
   - Weight
e) Physical and Mechanical Properties;
   - Low temperature flexibility
   - Maximum load
   - Elongation @ 5% Maximum Load (ultimate elongation)

- Dimensional stability
- High Temperature Stability
- Granule embedment
- Resistance to thermal shock* (foil faced products)

2. Manufacturer's printed recommendations for proper maintenance of the specified roof system including inspection frequencies, penetration addition policies, temporary repairs, and leak call procedures.

1.07 PRODUCT DELIVERY STORAGE AND HANDLING

A. Delivery: Deliver materials in the manufacturer's original sealed and labeled containers and in quantities required to allow continuity of application.

B. Storage: Store materials out of direct exposure to the elements. Store roll goods on a clean, flat and dry surface. All material stored on the roof overnight shall be stored on pallets. Rolls of roofing must be stored on ends. Store materials on the roof in a manner so as to preclude overloading of deck and building structure. Store materials such as solvents, adhesives and asphalt cutback products away from open flames, sparks or excessive heat. Cover all material using a breathable cover such as a canvas. Polyethylene or other non-breathable plastic coverings are not acceptable.

C. Handling: Handle all materials in such a manner as to preclude damage and contamination with moisture or foreign matter. Handle rolled goods to prevent damage to edges or ends.

D. Damaged Material: Any materials that are found to be damaged or stored in any manner other than stated above will be automatically rejected, removed and replaced at the Contractor's expense.

1.08 PROJECT/SITE CONDITIONS

A. Requirements Prior to Job Start

1. Notification: Give a minimum of 5 days notice to the Owner and manufacturer prior to commencing any work and notify both parties on a daily basis of any change in work schedule.

2. Permits: Obtain all permits required by local agencies and pay all fees which may be required for the performance of the work.

3. Safety: Familiarize every member of the application crew with all fire and safety regulations recommended by OSHA, NRCA and other industry or local governmental groups.

B. Environmental Requirements

1. Precipitation: Do not apply roofing materials during precipitation or in the event there is a probability of precipitation during application. Take adequate precautions to ensure that materials, applied roofing, and building interiors are protected from possible moisture damage or contamination.

C. Protection Requirements

1. Membrane Protection: Provide protection against staining and mechanical damage for newly applied roofing and adjacent surfaces throughout this project.

2. Torch Safety: Crew members handling torches shall be trained by an Authorized Certified Roofing Torch Applicator (CERTA) Trainer, be certified according to CERTA torch safety guidelines as published by the National Roofing Contractor's Association (NRCA), and follow torch safety practices as required by the contractor's insurance carrier. Designate one person on each crew to perform a daily fire watch. The designated crew member shall watch for fires or smoldering materials on all areas during roof construction activity, and for the minimum period required by CERTA guidelines after roofing material application has been suspended for the day.

3. Limited Access: Prevent access by the public to materials, tools and equipment during the course of the project.

4. Debris Removal: Remove all debris daily from the project site and take to a legal dumping area authorized to receive such materials.

5. Site Condition: Complete, to the owner's satisfaction, all job site clean-up including building interior, exterior and landscaping where affected by the construction.

6. Asbestos Containing Roofing Materials – Removal: Remove and dispose of any and all asbestos materials including asbestos containing roof materials (ACRM) in a manner which creates no hazard to the workers, the building occupants, or the environment. Follow local, state and federal laws, codes and ordinances during handling, demolition, removal and dumping of ACRM. Provide permits and certification letters in order to comply with all local, state and federal regulations pertaining to this project.

PART 2 PRODUCTS

2.01 ROOFING SYSTEM ASSEMBLY/PRODUCTS

A. Rigid Roof Insulation: Roof insulation shall be UL and FM approved. Insulation shall be approved in writing by the insulation manufacturer for intended use and for use with the specified roof assembly.

1. Gypsum Sheathing Panel and for Roofing Substrate and for Wood/Plywood Substrates to Receive Flashing Coverage: A panel composed of a gypsum based, non-structural water resistant core material integrally bonded with fiberglass mats on both sides having a nominal thickness of 1/4 inch. The panel surface shall be factory primed with a non-asphaltic primer. Acceptable types are as follows:

> DensDeck Prime Gypsum Roof Board, by Georgia Pacific Corporation; Atlanta, GA

2.02 DESCRIPTION OF SYSTEMS

A. Roofing Membrane Assembly: A roof membrane assembly consisting of two plies of a prefabricated, reinforced, homogeneous Styrene-Butadiene-Styrene (SBS) block copolymer modified asphalt membrane, applied over a prepared substrate. The reinforcement mats

shall be impregnated/saturated and coated each side with an SBS modified bitumen blend. The back of modified bitumen base ply shall be coated with factory applied polymer modified asphalt self-adhesive stripes staggered diagonally on the back surface of the sheet with an acrylic coating applied between the stripes to provide a bonded area of 50% of the total surface area. The back side of the base ply shall be surfaced with a removable film. The finish ply shall be coated one side with a torch grade SBS bitumen blend adhesive layer. The adhesive layer shall be manufactured using a process that embosses the surface with a grooved pattern to provide optimum burn-off of the plastic film and to maximize application rates. The roof system shall pass 500 cycles of ASTM D 5849 Resistance to Cyclic Joint Displacement (fatigue) at 14°F (-10°C). Passing results shall show no signs of membrane cracking or interply delamination after 500 cycles. The roof system shall pass 200 cycles of ASTM D 5849 after heat conditioning performed in accordance with ASTM D 5147.

> Siplast Paradiene 20 TS SA/Veral roof system

1. Modified Bitumen Base Ply

   a) Thickness (avg): 118 mils (2.9 mm) (ASTM D 5147)
   b) Thickness (min): 114 mils (2.8 mm) (ASTM D 5147)
   c) Weight (min per 100 ft² of coverage): 76 lb (3.7 kg/m²)
   d) Maximum filler content in elastomeric blend - 35% by weight
   e) Low temperature flexibility @ -13ºF (-25ºC): PASS (ASTM D 5147)
   f) Maximum Load (avg) @ 73ºF (23ºC): 30 lbf/inch (5.3 kN/m) (ASTM D 5147)
   g) Maximum Load (avg) @ 0ºF (-18ºC): 70 lbf/inch (12.3 kN/m) (ASTM D 5147)
   h) Elongation @ 5% Maximum Load (avg.) @ 73ºF (23ºC): 70% (ASTM D 5147)
   i) Dimensional Stability (max): 0.1% (ASTM D 5147)
   j) High Temperature Stability (min - sheet): 250ºF (121ºC)
   k) High Temperature Stability (min - stripes): 212ºF (100ºC)
   l) Approvals: UL Class listed, FM Approved (products shall bear seals of approval)
   m) Reinforcement: fiberglass mat or other meeting the performance and dimensional stability criteria
   n) Back Surfacing: polyolefin film

      > Siplast Paradiene 20 TS SA

2. Modified Bitumen Stripping Ply

   a) Thickness (avg): 114 mils (2.9 mm) (ASTM D 5147)
   b) Thickness (min): 110 mils (2.8 mm) (ASTM D 5147)
   c) Weight (min per 100 ft² of coverage): 76 lb (3.7 kg/m²)
   d) Maximum filler content in elastomeric blend: 35% by weight
   e) Low temperature flexibility @ -13º F (-25º C) - PASS (ASTM D 5147)
   f) Maximum Load (avg) @ 73ºF (23ºC): 30 lbf/inch (5.3 kN/m) (ASTM D 5147)
   g) Maximum Load (avg) @ 0ºF (-18ºC): 75 lbf/inch (13.2 kN/m) (ASTM D 5147)
   h) Elongation @ 5% Maximum Load (avg.) @ 73ºF (23ºC): 50% (ASTM D 5147)
   i) Dimensional Stability (max): 0.1% (ASTM D 5147)
   j) High Temperature Stability (min): 250ºF (121ºC) (ASTM D 5147)
   k) Approvals: UL Class listed, FM Approved (products shall bear seals of approval)
   l) Reinforcement: fiberglass mat or other meeting the performance and dimensional stability criteria

      > Siplast Paradiene 20 - torchable grade

2. Metal-Clad Modified Bitumen Finish ply

a) Thickness (avg): 142 mils (3.6 mm) (ASTM D 5147)
b) Thickness (min): 138 mils (3.5 mm) (ASTM D 5147)
c) Weight (min per 100 ft² of coverage): 92 lb (4.5 kg/m²)
d) Coating Thickness – back surface (min): 40 mils (1 mm) (ASTM D 5147)
e) Maximum filler content in elastomeric blend: 35% by weight
f) Low temperature flexibility @ 0º F (-18º C): PASS (ASTM D 5147)
g) Maximum Load (avg) @ 73ºF (23ºC): 85 lbf/inch (15 kN/m) (ASTM D 5147)
h) Maximum Load (avg) @ 0ºF (-18ºC): 180 lbf/inch (31.7 kN/m) (ASTM D 5147)
i) Elongation @ 5% Maximum Load (avg) @ 73ºF (23ºC): 45% (ASTM D 5147)
j) Tear-Strength (avg): 120 lbf (0.54 kN) (ASTM D 5147)
k) Dimensional Stability (max): 0.2% (ASTM D 5147)
l) High Temperature Stability (min): 225ºF (107ºC) (ASTM D 5147)
m) Cyclic Thermal Shock Stability (maximum): 0.2% (ASTM D 6298)
n) Approvals: UL Approved, FM Approved (products shall bear seals of approval)
o) Reinforcement: fiberglass scrim mat or other meeting the performance and dimensional stability criteria
p) Surfacing: aluminum metal foil

> Siplast Veral Aluminum –torchable grade

B. Flashing Membrane Assembly: A flashing membrane assembly consisting of a prefabricated, reinforced, Styrene-Butadiene-Styrene (SBS) block copolymer modified asphalt membrane with a continuous, channel-embossed metal-foil surfacing. The finish ply shall conform to ASTM D 6298 and the following physical and mechanical property requirements.

> Siplast Veral flashing system, aluminum finish

1. Cant Backing Sheet for Wood/Plywood Surfaces to Receive Flashing Coverage

a) Thickness (avg): 102 mils (2.6 mm) (ASTM D 5147)
b) Thickness (min): 98 mils (2.5 mm) (ASTM D 5147)
c) Weight (min per 100 ft² of coverage): 72 lb (3.5 kg/m²)
d) Maximum filler content in elastomeric blend: 35% by weight
e) Low temperature flexibility @ -13º F (-25º C) - PASS (ASTM D 5147)
f) Maximum Load (avg) @ 73ºF (23ºC): 30 lbf/inch (5.3 kN/m) (ASTM D 5147)
g) Maximum Load (avg) @ 0ºF (-18ºC): 75 lbf/inch (13.2 kN/m) (ASTM D 5147)
h) Elongation @ 5% Maximum Load (avg.) @ 73ºF (23ºC): 50% (ASTM D 5147)
i) Dimensional Stability (max): 0.1% (ASTM D 5147)
j) High Temperature Stability (min - sheet): 250ºF (121ºC) (ASTM D 5147)
k) High Temperature Stability (min – adhesive coating): 212ºF (100ºC) (ASTM D 5147)
l) Approvals: UL Class listed, FM Approved (products shall bear seals of approval)
m) Reinforcement: fiberglass mat or other meeting the performance and dimensional stability criteria
n) Back Surfacing: polyolefin film

> Siplast Paradiene 20 SA

2. Metal-Clad Modified Bitumen Flashing Sheet

a) Thickness (avg): 142 mils (3.6 mm) (ASTM D 5147)
b) Thickness (min): 138 mils (3.5 mm) (ASTM D 5147)

c) Weight (min per 100 ft² of coverage): 92 lb (4.5 kg/m²)
d) Coating Thickness – back surface (min): 40 mils (1 mm) (ASTM D 5147)
e) Maximum filler content in elastomeric blend: 35% by weight
f) Low temperature flexibility @ 0° F (-18° C): PASS (ASTM D 5147)
g) Maximum Load (avg) @ 73°F (23°C): 85 lbf/inch (15 kN/m) (ASTM D 5147)
h) Maximum Load (avg) @ 0°F (-18°C): 180 lbf/inch (31.7 kN/m) (ASTM D 5147)
i) Elongation @ 5% Maximum Load (avg) @ 73°F (23°C): 45% (ASTM D 5147)
j) Tear-Strength (avg): 120 lbf (0.54 kN) (ASTM D 5147)
k) Dimensional Stability (max): 0.2% (ASTM D 5147)
l) High Temperature Stability (min): 225°F (107°C) (ASTM D 5147)
m) Cyclic Thermal Shock Stability (maximum): 0.2% (ASTM D 6298)
n) Approvals: UL Approved, FM Approved (products shall bear seals of approval)
o) Reinforcement: fiberglass scrim mat or other meeting the performance and dimensional stability criteria
p) Surfacing: aluminum metal foil

> Siplast Veral Aluminum

C. Catalyzed Acrylic Resin Flashing System: A specialty flashing system consisting of a liquid-applied, fully reinforced, multi-component acrylic membrane installed over a prepared or primed substrate. The flashing system consists of a catalyzed acrylic resin primer, basecoat and topcoat, combined with a non-woven polyester fleece. The resin and catalyst are pre-mixed immediately prior to installation. The use of the specialty flashing system shall be specifically approved in advance by the membrane manufacturer for each application.

> Parapro 123 Flashing System by Siplast; Irving, TX

D. Substitute Roof Systems: No substitutes

2.03 ROOFING ACCESSORIES

A. Bituminous Cutback Materials

1. Primer: A high flash, quick drying, asphalt solvent blend which meets or exceeds ASTM D 41 requirements.

> Siplast LS-917 Asphalt Primer by Siplast; Irving, TX

2. Mastics: An asphalt cutback mastic, reinforced with non-asbestos fibers, used as a base for setting metal flanges conforming to ASTM D 4586 Type II requirements.

> Siplast PA-1021 Plastic Cement by Siplast; Irving, TX

B. Sealant: A moisture-curing, non-slump elastomeric sealant designed for roofing applications. The sealant shall be approved by the roof membrane manufacturer for use in conjunction with the roof membrane materials. Acceptable types are as follows:

> Siplast PS-304 Elastomeric Sealant by Siplast; Irving, TX

C. Synthetic Chips: Synthetic chips to match the factory applied reflective surfacing of the finish ply.

D. Metallic Powder: A finely graded metal dust as supplied or approved by the membrane manufacturer, used for covering of bitumen overruns over the foil surfaced membrane.

E. Perlite Cant Strips: A cant strip composed of expanded volcanic minerals combined with waterproofing binders. The top surface shall be pre-treated with an asphalt based coating. The face of the cant shall have a nominal 4 inch dimension.

F. Fasteners

1. Insulation Fasteners: Insulation fasteners and plates shall be FM Approved, and/or approved by the manufacturer of the primary roofing products. The insulation fasteners shall provide attachment required to meet the specified uplift performance and to restrain the insulation panels against the potential for ridging. The fastening pattern for each insulation panel to be used shall be as recommended by the insulation manufacturer and approved by the manufacturer of the primary roofing products. Acceptable insulation fastener manufacturers for specific deck types are listed below.

   a) Wood/Plywood Decks and Gypsum Sheathing Panel Fasteners for Wood/Plywood Substrates to Receive Flashing Coverage: Insulation mechanical fasteners for wood/plywood decks shall be factory coated for corrosion resistance. The fastener shall conform meet or exceed Factory Mutual Standard 4470 and when subjected to 30 Kesternich cycles, show less than 15% red rust. Acceptable insulation fastener types for wood/plywood decks are listed below.

      - A fluorocarbon coated screw type roofing fastener having a minimum 0.220 inch thread diameter. Plates used in conjunction with the fastener shall be a metal type having a minimum 3 inch diameter, as supplied by the fastener manufacturer.

        > Parafast Fastener by Siplast; Irving, TX
        > Roofgrip with Buildex Metal Plates by ITW Buildex; Itasca, IL
        > Dekfast #12 with Dekfast Steel Hexagonal Plates by Construction Fasteners, Inc.; Wyomissing, PA
        > Standard Roofing Fastener by Olympic Manufacturing Group; Agawam, MA

2. Flashing Reinforcing Sheet Fasteners for Wood/Plywood Substrates to Receive Flashing Coverage: Fasteners shall be approved by the manufacturer of the primary roofing products. Acceptable fasteners for specific substrate types are listed below.

   a) Wood/Plywood Substrates

      - A 12 gauge, spiral or annular threaded shank, zinc coated steel roofing fastener having a minimum 1 inch head.

        > Square Cap by W.H. Maze Co.; Peru, IL
        > 12 Gauge Simplex Nail by the Simplex Nail and Manufacturing Co., Americus, GA

G. Walktread: A prefabricated, puncture resistant polyester core reinforced, polymer modified bitumen sheet material topped with a ceramic-coated granule wearing surface.

1. Thickness: 0.217 in (5.5 mm)
2. Weight: 1.8 lb/ft² (8.8 kg/m²)

3. Width: 30 in (76.2 cm)

> Paratread Roof Protection Material by Siplast; Irving, TX

2.04 RELATED COMPONENTS

A. Perlite Cant Strips: A cant strip composed of expanded volcanic minerals combined with waterproofing binders. The top surface shall be pre-treated with an asphalt based coating. The face of the cant shall have a nominal 4 inch dimension.

B. Lead Drain Flashings: Formable type, weighing a minimum of 4 lb. per square foot; in sheets of minimum 30 inch x 30 inch dimension.

C. Lead Pipe Flashings: Preformed from sheet stock weighing a minimum of 4 lb. per square foot, and soldered with a minimum 4 inch perimeter flange with a sleeve opening fabricated to fit closely around the penetration without forcing. Lead sleeve length shall be of sufficient height to allow a minimum of 1 inch to be crimped inside of the pipe stack.

D. Fabricated Metal: Fabricate all metal components to be used in conjunction with the roof system using 24 gauge Kynar Finished steel, meeting ASTM A 526 specifications.

1. Metal Edge/Fascia: Fabricate metal edge/fascia incorporating a 4 inch perimeter flange with a minimum 1/4 inch gravel stop rise. The fascia shall be of sufficient width to adequately cover the roof assembly/wall juncture. The bottom edge of the fascia shall have a minimum 1/2 inch drip edge, hemmed and formed at 30 degrees and shall be fabricated for attachment to a continuous cleat at the outside base of the nailer. Fabricate metal edge/fascia in maximum 10 feet sections. Fabricate corner pieces of metal edge fascia with 1 foot sections in either direction from the corner. Fabricate cover plates and accessory components in accordance with SMACNA guidelines.

PART 3 EXECUTION

3.01 FIELD QUALITY CONTROL

A. Pre-Job Conference: Conduct a pre-job conference to include the designer, Owner, roofing Contractor and manufacturer's representative prior to application of roofing.

B. Foremen: Provide the roofing foreman with a copy of these specifications to be available at the job site at all times. The presence of specifications and an inspector shall not relieve the Contractor of strict compliance with the manufacturer's specifications, detail drawings, and/or approved material requirements.

C. Deck Penetrations: Verify that work penetrating the roof deck, or which may otherwise affect the roofing application, has been properly completed.

D. Final Inspection – post installation meeting: Arrange a meeting at the completion of the project to be attended by all parties that were present at the pre-job conference. A punch list of items required for completion shall be compiled by the Contractor and the manufacturer's representative. Complete, sign, and mail the punch list form to the manufacturer's headquarters.

3.02 PREPARATION

A. General: Sweep or vacuum all surfaces, removing all loose aggregate and foreign substances prior to commencement of roofing.

B. Remove All Existing:

- Roof membrane
- Base flashings
- Edge metal
- Flanged metal flashings
- Cants
- Non functional penetrations/curbs
- Drain assemblies
- Metal trim, counterflashing

3.03 SUBSTRATE REQUIREMENTS

A. Preparation of Wood/Plywood Substrates to Receive Flashing Coverage: Mechanically attach the gypsum sheathing panels to all wood/plywood substrates that will be covered with the specified flashing membrane, using the specified screws/plates, at 12 inches o.c. staggered. Cut the cant backing sheet into 12 inch widths and peel the release film from the back of the sheet. Set the sheet into place extending 6 inches onto the field of the roof area and 6 inches up the gypsum sheathing panel surface utilizing minimum 3 inch side laps. Set the cant into place prior to installation of the roof membrane base ply.

B. Roof Decks: Structural roof decks should properly provide sufficient strength to support anticipated dead and live loads and normal construction traffic without excessive deflection or movement. All openings, walls or projections through the roof deck should be completed before application of the roof membrane is begun. The deck should be constructed and necessary deck repairs made according to the deck manufacturer's specifications following best established practices.

1. Wood: Wood decks should be constructed of dry, well-seasoned lumber of minimum 1 inch thickness, tongue and groove, shiplap or splined together at side joints and matched at end joints. Boards should have a bearing on rafters at each end and be securely nailed. Cracks wider than 1/4 inch and knot holes larger than 1 inch in diameter should be covered with sheet metal.

3.04 SUBSTRATE PREPARATION

A. Insulation: Install insulation panels with end joints offset; edges of the panels shall be in moderate contact without forcing applied in strict accordance with the insulation manufacturer's requirements and the following instructions. Where insulation is installed in two or more layers, stagger joints between layers. Maintain a maximum panel size of 4 feet by 4 feet for insulation applied in hot asphalt or insulation adhesive.

1. Insulation - single layer: Mechanically attach the insulation panels, using the specified fasteners, at a rate of 1 fastener for every 2 square feet of panel area (16 per 4' x 8'

panel). Increase the fastening frequency by 50% at the perimeter of the roof area and by 75% at the corners.

3.05 ROOF MEMBRANE INSTALLATION - GENERAL

A. Membrane Application: Apply roofing in accordance with roofing system manufacturer's instructions and the following requirements. Application of roofing membrane components shall immediately follow application of base sheet and/or insulation as a continuous operation.

B. Aesthetic Considerations: An aesthetically pleasing overall appearance of the finished roof application is a standard requirement for this project. Make necessary preparations, utilize recommended application techniques, apply the specified materials including granules and metallic powder, and exercise care in ensuring that the finished application is acceptable to the Owner.

C. Priming: Prime metal and concrete and masonry surfaces with a uniform coating of the specified asphalt primer.

D. Bitumen Consistency: Cutting or alterations of bitumen, primer, and sealants will not be permitted.

E. Roofing Application: Apply all layers of roofing free of wrinkles, creases or fishmouths. Exert sufficient pressure on the roll during application to ensure prevention of air pockets.

1. Apply all layers of roofing perpendicular to the slope of the deck.

2. Unroll the base ply, and set the roll into place utilizing minimum 3 inch side and end laps. Fold one end of the roll back onto itself by 24 inches. Peel the release film off of the back of the 24 inch end section of the sheet and lay into place, pressing the 24 inch end section of the sheet firmly into place over the substrate. Pull the release film free from the underside of the remainder of the sheet while pressing the material into place with a follow tool as the film is being removed, leaving the end laps unadhered. Prior to adhering the end laps, cut a dog ear angle at each end lap on overlapping selvage edges. Torch apply end laps, ensuring that the adhesive stripes on the underside of the overlapping sheet and the top surface of the underlying sheet flow into a layer of continuously bonded or fused asphalt. Using a clean trowel, apply top pressure to top seal T-laps immediately following sheet application. Stagger end laps a minimum of 3 feet. Laps of the base ply must not be left exposed overnight. The base ply application must be immediately followed by the application of the finish ply. A phased application between the base and finish is not approved. In cases where rapid onset of inclement weather occurs, all exposed lap edges should be heat sealed with a torch and trowel, or heat welded.

3. Prior to application of the finish ply, ensure that the base ply seams are firmly sealed without wrinkles and/or fishmouths. Fully bond the finish ply to the base ply, utilizing minimum 3 inch side and end laps. Apply each sheet directly behind the torch applicator. Stagger end laps of the finish ply a minimum 3 feet. Cut a dog ear angle at the end laps on overlapping selvage edges. Using a clean trowel, apply top pressure to top seal T-laps immediately following sheet application. Stagger side laps of the finish ply a minimum 12 inches from side laps in the underlying base ply. Stagger end laps of the finish ply a minimum 3 feet from end laps in the underlying base ply.

F. Synthetic Chip Embedment: Broadcast synthetic chips over bitumen/adhesive overruns on the finish ply surface.

G. Flashing Application - masonry surfaces: Flash masonry parapet walls and curbs using the reinforcing sheet and the metal foil flashing membrane. After the base ply has been applied to the top of the cant, fully adhere the reinforcing sheet, utilizing minimum 3 inch side laps and extend a minimum of 3 inches onto the base ply surface and 3 inches up the parapet wall above the cant. After the final roofing ply has been applied to the top of the cant, prepare the surface area that is to receive flashing coverage by torch heating granular surfaces or by application of asphalt primer; allowing primer to dry thoroughly. Torch apply the metal foil-faced flashing into place using three foot widths (cut off the end of roll) always lapping the factory selvage edge. Stagger the laps of the metal foil flashing layer from lap seams in the reinforcing layer. Extend the flashing sheet a minimum of 4 inches beyond the toe of the cant onto the prepared surface of the finished roof and up the wall to the desired flashing height. Exert pressure on the flashing sheet during application to ensure complete contact with the wall/roof surfaces, preventing air pockets; this can be accomplished by using a damp sponge or shop rag. Check and seal all loose laps and edges. Nail the top edge of the flashing on 9 inch centers. (See manufacturer's schematic for visual interpretation).

H. Flashing Application – surfaces sheathed with gypsum sheathing panels: After the gypsum sheathing panel and cant backing sheet have been installed, flash parapet walls and curbs with the specified reinforcing sheet and the metal foil flashing membrane. The reinforcing sheet shall have minimum 3 inch side laps and extend a minimum of 3 inches onto the base ply surface and to the top of the parapet wall or curb. Using the specified fasteners, mechanically attach the reinforcing sheet through the field of the sheet to the vertical flashing surface on 12 inch centers from the top of the cant to the top of the wall or curb. Fully adhere the remainder of the flashing reinforcing sheet that extends over the cant and roof level. Using a Leister Hand Welding Tool, seal the laps between flashing reinforcing sheets. After the final roofing ply has been applied to the top of the cant, prepare the surface area that is to receive flashing coverage by torch heating granular surfaces or by application of asphalt primer; allowing primer to dry thoroughly. Torch apply the metal foil-faced flashing into place using three foot widths (cut off the end of roll) always lapping the factory selvage edge. Stagger the laps of the metal foil flashing layer from lap seams in the reinforcing layer. Extend the flashing sheet a minimum of 4 inches beyond the toe of the cant onto the prepared surface of the finished roof and up the wall to the desired flashing height. Exert pressure on the flashing sheet during application to ensure complete contact with the wall/roof surfaces, preventing air pockets; this can be accomplished by using a damp sponge or shop rag. Check and seal all loose laps and edges. Nail the top edge of the flashing on 9 inch centers. (See manufacturer's schematic for visual interpretation).

I. Catalyzed Acrylic Resin Flashing System: Install the liquid-applied primer and flashing system in accordance with the membrane system manufacturer’s printed installer’s guidelines and other applicable written recommendations as provided by the manufacturer.

J. Use of Metallic Powder: Broadcast metallic powder over all bitumen overruns on the metal foil membrane surface while the bitumen is still hot to ensure a monolithic surface color.

K. Water Cut-Off: At end of day's work, or when precipitation is imminent, construct a water cut-off at all open edges. Cut-offs can be built using asphalt or plastic cement and roofing felts, constructed to withstand protracted periods of service. Cut-offs must be completely removed prior to the resumption of roofing.

3.06 RELATED COMPONENTS - INSTALLATION

A. Edge Metal: Completely prime metal flanges and allow to dry prior to installation. Turn the base ply down 2 inches past the roof edge and over the nailer. After the base ply and continuous cleat (if applicable) have been installed, set the flange in mastic and stagger nail every 3 inches on center. Strip-in the flange using the stripping-ply material, extending a minimum of 4 inches beyond the edge of the flange. Terminate the finish ply at the gravel-stop rise of the edge metal. SEE ITEM: SEALANT, for finish of this detail.

B. Lead Pipe Flashings: Completely prime the lead flanges and allow to dry prior to installation. After the base ply has been applied, set the flange in mastic and strip-in the flange using the stripping-ply material, extending a minimum of 4 inches beyond the edge of the flange. Terminate the finish ply at the flange-sleeve juncture of the pipe flashing. SEE ITEM: SEALANT for finish of this detail.

C. Lead Drain Flashings: Completely prime the lead drain flashing and allow to dry prior to installation. After the base ply has been applied, set the lead flashing sheet in mastic and form to turn down inside of the drain bowl. Ply-in the perimeter of the lead flashing using an additional layer of the base ply material, overlapping the perimeter of the lead a minimum of 4 inches. Terminate the finish ply to extend beneath the clamping ring seal. Install the clamping ring with all bolts in place.

D. Walktread: Cut the walktread into maximum 5 foot lengths and allow to relax until flat. Adhere the sheet using the specified plastic cement. Apply the specified cement in a 3/8 inch thickness to the back of the product in 5 inch by 5 inch spots in accordance with the pattern as supplied by the walktread manufacturer. Walk-in each sheet after application to ensure proper adhesion. Use a minimum spacing of 2 inches between sheets to allow for proper drainage.

E. Sealant: Caulk all exposed finish ply edges at the transition to metal flashings incorporated into the roof system with a smooth continuous bead of the specified sealant.

3.07 SPECIAL CONDITIONS

A. Site Condition: Leave all areas around job site free of debris, roofing materials, equipment and related items after completion of job.

B. Notification Of Completion: Notify the manufacturer by means of manufacturer's printed Notification of Completion form of job completion in order to schedule a final inspection date.

C. Final Inspection

1. Post-Installation Meeting: Hold a meeting at the completion of the project, attended by all parties that were present at the pre-job conference. A punch list of items required for completion shall be compiled by the Contractor and the manufacturer's representative. Complete, sign, and mail the punch list form to the manufacturer's headquarters.

D. Issuance Of The Guarantee: Complete all post installation procedures and meet the manufacturer's final endorsement for issuance of the specified guarantee.