SECTION 07563
FLUID APPLIED ROOFING RESTORATION

Foothill Middle School

SCOPE OF WORK

Power Wash entire roof section with Simple Green and water solution.

1. Remove and replace all base flashings and curb flashings in hot asphalt. Coat base flashings with Pyramic reflective coating.

2. Repair all blisters <6” with flashing adhesive. Repair all blisters >6” with flashing adhesive and install new cap sheet over repair. 3 course edges of installed cap sheet.

3. Cut out roof and remove abandoned supports. Install new 2 ply modified system in hot asphalt overlapping onto existing roof a minimum of 24”.

4. Replace all roof pipe penetrations on any conduit pipes. Remove 2’ diameter of roof system down to deck around pipe penetrations. Replace pipe jack to fit conduit. Install a 2 ply system in Flashing Bond overlapping onto existing roof a minimum of 24”. Three course the transition with White Star coating.

5. Prime roof with All-Knight Primer at 0.5 gal/100 square feet.

6. Apply White-Star at 2 gal/100 square feet.

7. Immediately broadcast 200lbs of Lucas Fire Star 3/8” gravel.

GENERAL

1.2 SECTION INCLUDES

1. Built-Up Smooth or Mineral Modified Surface Roof Restoration (1.4.C.7/8 and 9)(2.4)

2. Accessories and Owner Supplied Material list. (3.10)

1.3 RELATED SECTIONS

1. Section 06100 - Rough Carpentry: Roof blocking installation and requirements.

2. Section 07620 - Sheet Metal Flashing and Trim: Metal cap flashing and expansion joints.

1.4 REFERENCES

1. ASTM C 1250 - Standard Test Method for Nonvolatile Content of Cold Liquid-Applied Elastomeric Waterproofing Membranes.

2. ASTM D 5 - Standard Test Method for Penetration of Bituminous Materials.

3. ASTM D 75 - Standard Practice for Sampling Aggregates.

4. ASTM D 562 - Standard Test Method for Consistency of Paints Measuring Krebs Unit (KU)

Viscosity Using a Stormer-Type Viscometer.

5. ASTM D 1475 - Standard Test Method For Density of Liquid Coatings, Inks, and Related Products.

6. ASTM D 2369 - Standard Test Method for Volatile Content of Coatings.

7. ASTM D 2939 - Standard Test Methods for Emulsified Bitumens Used as Protective Coatings.

8. ASTM D 3960 - Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings.

9. ASTM D 4209 - Standard Practice for Determining Volatile and Nonvolatile Content of Cellulosics, Emulsions, Resin Solutions, Shellac, and Varnishes.

10. ASTM E 1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces

11. SRI - Solar Reflectance Index calculated according to ASTM E 1980.

12. National Roofing Contractors Association (NRCA) - Roofing and Waterproofing Manual.

1.5 SYSTEM DESCRIPTION

1. Built-Up Smooth or Mineral Modified Surface Restoration: Renovation work includes:
    1. For gravel surfaced systems topcoat entire roof surface and resurface entire roof surface with gravel while it is wet.

1.6 SUBMITTALS

1. Submit under provisions of Section 01300.

2. Product Data: Manufacturer's data sheets on each product to be used, including:
    1. Preparation instructions and recommendations.
    2. Storage and handling requirements and recommendations.
    3. Installation methods.

3. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

4. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic inspection and maintenance of all completed roofing work. Provide product warranty executed by the manufacturer. 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.

1.7 QUALITY ASSURANCE

1. Perform Work in accordance with NRCA Roofing and Waterproofing Manual.

2. Manufacturer Qualifications: Manufacturer: Company specializing in manufacturing products specified in this section with documented ISO 9001 certification and minimum twelve years and experience.

3. Installer Qualifications: Company specializing in performing Work of this section with minimum five years documented experience and a certified Pre-Approved Garland Contractor.

4. Installer's Field Supervision: Maintain a full-time Supervisor/Foreman on job site during all phases of roofing work while roofing work is in progress.

5. Product Certification: Provide manufacturer's certification that materials are manufactured in the United States and conform to requirements specified herein, are chemically and physically compatible with each other, and are suitable for inclusion within the total roof system specified herein.

6. Source Limitations: Obtain all components of roof system from a single manufacturer. Secondary products that are required shall be recommended and approved in writing by the roofing system Manufacturer. Upon request of the Architect or Owner, submit Manufacturer's written approval of secondary components in list form, signed by an authorized agent of the Manufacturer.

1.8 PRE-INSTALLATION CONFERENCE

1. Convene a pre-roofing conference approximately two weeks before scheduled commencement of roofing system installation and associated work.

2. Require attendance of installers of deck or substrate construction to receive roofing, installers of rooftop units and other work in and around roofing which must precede or follow roofing work including mechanical work, Architect, Owner, roofing system manufacturer's representative.

3. Objectives include:
    1. Review foreseeable methods and procedures related to roofing work, including set up and mobilization areas for stored material and work area.
    2. Tour representative areas of roofing substrates, inspect and discuss condition of substrate, roof drains, curbs, penetrations and other preparatory work.
    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 and finalize schedule related to roofing work and verify availability of materials, installer's personnel, equipment and facilities needed to make progress and avoid delays.
    6. Review required inspection, testing, certifying procedures.
    7. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing.
    8. Record conference including decisions and agreements reached. Furnish a copy of records to each party attending.

1.9 DELIVERY, STORAGE, AND HANDLING

1. Deliver and store products in manufacturer's unopened packaging with labels intact until ready for installation.

2. Store all roofing materials in a dry place, on pallets or raised platforms, out of direct exposure to the elements until time of application. Store materials at least 4 inches above ground level and covered with "breathable" tarpaulins.

3. Stored in accordance with the instructions of the manufacturer prior to their application or installation. Store roll goods on end on a clean flat surface. No wet or damaged materials will be used in the application.

4. Store at room temperature wherever possible, until immediately prior to installing the roll. During winter, store materials in a heated location with a 50 degree F (10 degree C) minimum temperature, removed only as needed for immediate use. Keep materials away from open flame or welding sparks.

5. Avoid stockpiling of materials on roofs without first obtaining acceptance from the Architect/Engineer.

6. Adhesive storage shall be between the range of above 50 degree F (10 degree C) and below 80 degree F (27 degree C). Area of storage shall be constructed for flammable storage.

1.10 PROJECT CONDITIONS

1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

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

3. 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.

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

5. 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.

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

7. Protect completed roof sections from foot traffic for a period of at least 48 hours at 75 degrees F (24 degrees C) and 50 percent relative humidity or until fully cured.

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

9. Minimum temperature for application is 40 degrees F (4 degrees C) and rising for solvent based materials and 50 degrees F (10 degrees C) and rising for water based.

1.11 WARRANTY

1. Upon completion of the work, provide the Manufacturer's written and signed limited labor and materials Warranty, warranting that, if a leak develops in the roof during the term of this warranty, due either to defective material or defective workmanship by the installing contractor, the manufacturer shall provide the Owner, at the Manufacturer's expense, with the labor and material necessary to return the defective area to a watertight condition.
    1. Warranty Period:
        a. (10 years): 5 years from date of acceptance plus 5 additional years after required inspection by Garland.

2. Installer is to guarantee all work against defects in materials and workmanship for a period indicated following final acceptance of the Work.
    1. Warranty Period:
        a. 2 years from date of acceptance.

PART 2 PRODUCTS

2.1 MANUFACTURERS

1. Acceptable Manufacturer: Garland Company, Inc. (The), which is located at: 3800 E. 91st St.; Cleveland, OH 44105; Email: jsalazar@garlandind.com (925) 890-6509

2. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 ROOF RESTORATION SYSTEM FOR BUILT-UP SMOOTH OR MINERAL MODIFIED SURFACE ROOFS

1. White-Star:
    1. Primer: All-Knight Primer
    2. Coating: White-Star.
    3. Parapet Wall Coating: Pyramic
    4. Modified Base Ply: Flexbase 80
    5. Modified Cap Sheet: StressPly FR Mineral
    6. Membrane Adhesive: Flashing Bond and Hot Asphalt
    7. Surfacing: Lucas Fire Star 3/8” Gravel
    8. Caulking: Tuff-Stuff MS

2.3 EDGE TREATMENT AND ROOF PENETRATION FLASHINGS

1. Flashing Boot - Rubbertite Flashing Boot: Neoprene pipe boot for sealing single or multiple pipe penetrations adhered in approved adhesives as recommended and furnished by the membrane manufacturer.

2. Vents and Breathers: Heavy gauge aluminum and fully insulated vent that allows moisture and air to escape but not enter the roof system as recommended and furnished by the membrane manufacturer.

3. Pitch pans, Rain Collar 24 gauge stainless or 20oz (567gram) copper. All joints should be welded/soldered watertight. See details for design.

4. Drain Flashings should be 4lb (1.8kg) sheet lead formed and rolled.

5. Plumbing stacks should be 4lb (1.8kg) sheet lead formed and rolled.

PART 3 EXECUTION

3.1 EXAMINATION

1. Do not begin installation until substrates have been properly prepared.

2. Verify that work penetrating the roof deck, or which may otherwise affect the roofing, has been properly completed.

3.2 ROOF PREPARATION AND REPAIR

1. General:
    1. Remove existing roof flashings from curbs down to the surface of the roof. Remove existing flashings at roof penetrations.
    2. Remove all wet, deteriorated, blistered or delaminated roofing membrane and fill in any low spots occurring as a result of removal work to create a smooth, even surface for application of new roof membranes.
    3. Existing roof surfaces shall be primed as necessary and allowed to dry prior to installing the roofing system.

2. Remove all loose dirt and foreign debris from the roof surface. Do not damage roof membrane in cleaning process.

3. Clean and seal all metal coping, and repair any damaged metal where necessary. Seal watertight all fasteners, pipes, drains, vents, joints and penetrations where water could enter the building envelope.

4. Clean the entire roof surface by removing all dirt, algae, paint, oil, talc, rust or foreign substance. Use a 10 percent solution of TSP (tri-sodium phosphate), Simple Green and warm water. Scrub heavily soiled areas with a brush. Rinse with fresh water to remove all TSP solution. Allow roof to dry thoroughly before continuing.

5. Repair existing roof membrane as necessary to provide a sound substrate for the liquid membrane. All surface defects (cracks, blisters, tears) must be repaired with similar materials.

6. Pre-Treatment of Known Growth - General Surfaces: Once areas of moss, mold, algae and other fungal growths or vegetation have been removed and surfaces have also been thoroughly cleaned, apply a biocide wash at a maximum spread rate of 0.2 gallons/square (0.08 liters/m), to guard against subsequent infection. Allow to dry onto absorbent surfaces before continuing with the application. On non-absorbent surfaces, allow to react before thoroughly rinsing to remove all traces of the solution.

3.3 INSTALLATION

1. General Installation Requirements:
    1. Install in accordance with manufacturer's instructions. Apply to minimum coating thickness required by the manufacturer.
    2. Cooperate with manufacturer, inspection and test agencies engaged or required to perform services in connection with installing the roof system.
    3. Insurance/Code Compliance: Where required by code, install and test the roofing system to comply with governing regulation and specified insurance requirements.
    4. Protect work from spillage of roofing materials and prevent materials from entering or clogging drains and conductors. Replace or restore work damaged by installation of the roofing system.
    5. All primers must be top coated within 24 hours of application. Re-prime If more time passes after priming.
    6. Keep roofing materials dry during application. Phased construction can be allowed as long as no, more than 7 days pass between coats excluding primers.
    7. Coordinate counter flashing, cap flashings, expansion joints and similar work with work specified in other Sections under Related Work.
    8. Coordinate roof accessories and miscellaneous sheet metal accessory items, including piping vents and other devices with work specified in other Sections under Related Work.

2. Smooth or Mineral Surface Restoration: Renovation work includes:
    1. Surface preparation: Remove all loose roofing granules, dirt and foreign debris from the roof surface.
    2. Flashing:
        a. Coping Edges:
            1) With trowel grade mastic using modified membrane as the flashing and nailed 8 inches O.C. at all vertical surfaces.
            2) Seal all vertical laps of flashing membrane with a three-course application of Flashing Bond and fiberglass mesh and aluminize.
            3) Seal junction of flashing membrane and roof with a three-course application of Flashing Bond and mesh.
    3. Primer: Prime entire roof surface at 1/2 gallon per 100 SF.
    4. Coating: Apply Coating to entire roof surface.
        a. Apply White-Star at 2 gallons per 100 SF.
    5. Surfacing: For gravel surfaced systems topcoat entire roof surface and resurface entire roof surface with gravel while it is wet.

3.4 CLEANING

1. Clean-up and remove daily from the site all wrappings, empty containers, paper, loose particles and other debris resulting from these operations.

2. Remove asphalt markings from finished surfaces.

3. Repair or replace defaced or disfigured finishes caused by Work of this section.

3.5 PROTECTION

1. Provide traffic ways, erect barriers, fences, guards, rails, enclosures, chutes and the like to protect personnel, roofs and structures, vehicles and utilities.

2. Protect exposed surfaces of finished walls with tarps to prevent damage.

3. Plywood for traffic ways required for material movement over existing roofs shall be not less than 5/8 inch (16 mm) thick.

4. In addition to the plywood listed above, an underlayment of minimum 1/2 inch (13 mm) recover board is required on new roofing.

5. Special permission shall be obtained from the Manufacturer before any traffic shall be permitted over new roofing.

3.6 FIELD QUALITY CONTROL

1. Require attendance of roofing materials manufacturers' representatives a minimum of 3 times per week during installation of the roofing system.

2. Correct defects or irregularities discovered during field inspection.

3.7 FINAL INSPECTION

1. At completion of roofing installation and associated work, meet with Contractor, Architect, installer, installer of associated work, roofing system manufacturer's representative and others directly concerned with performance of roofing system.

2. Walk roof surface areas, inspect perimeter building edges as well as flashing of roof penetrations, walls, curbs and other equipment. Identify all items requiring correction or completion and furnish copy of list to each party in attendance.

3. If core cuts verify the presence of damp or wet materials, the installer shall be required to replace the damaged areas at his own expense.

4. Repair or replace deteriorated or defective work found at time above inspection as required to a produce an installation that is free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

5. Architect upon completion of corrections.

6. Following the final inspection, provide written notice of acceptance of the installation from the roofing system manufacturer.

3.8 PROTECTION

1. Protect installed products until completion of project.

2. Touch-up, repair or replace damaged products before Substantial Completion.

3.10 Owner Supplied Material:

A. Contractor must submit to the Owner as part of the submittal package all quantities of owner supplied materials needed to complete this project per specification section 075200 a minimum of (6) weeks prior to project start date. Contractor must provide all labor to install owner supplied materials as part of their bid. All materials not specifically included in the owner supplied materials section will be the responsibility of the contractor to provide and install in compliance with section 07520. Contractor must return all overages to the Owner and under estimated quantities will be the full responsibility of the contractor to supply and install in full compliance with this section. Freight charges of Owner supplied materials will be the responsibility of the Owner. Contractor must take delivery of materials, properly cover and store at jobsite in a secured container Contractor must be able to provide certification in writing from roof system manufacturer that the contractor is approved to install the specified roof system and provide all warranty requirements of section 07520.

B. Materials specifically provided by the Owner thru the CMAS program;

MDUSD: Foothill Middle School:

23 - Flexbase 80. 1 sq roll.
32 - Stressply FR Mineral. 0.75 sq roll.
5- Flashing Bond Mastic, 5 gal pail
12 - Tuff Stuff Sealant 10.3oz Tubes
5 – White Star. 55 gal drum.
2 – White Star. 5 gal bucket
17 – All-Knight Primer. 5 gal bucket
2 – GarMesh 6” roll
6 - Pyramic Base Coat. 5 gal bucket
6 – Pyramic. 5 gal bucket

END OF SECTION