BERRYESSA UNION SCHOOL DISTRICT

ROOF REPLACEMENT

BUILDINGS 100 TO 500
NORTHWOOD ELEMENTARY SCHOOL
2760 EAST TRIMBLE ROAD, SAN JOSE, CALIFORNIA

TECHNICAL SPECIFICATIONS

17 MARCH 2022

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ROOF REPLACEMENT – BUILDINGS 100 TO 500

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TECHNICAL SPECIFICATIONS

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17 MARCH 2022

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ROOF-RELATED SUMMARY OF WORK

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Project Information and Conditions

B. Emergency Response

C. Construction Schedule

D. Schedule of Values

E. Dimensions and Quantities

F. Guaranties and Warranties

G. Clean-up

1.02 PROJECT INFORMATION

A. Project Name: Roof Replacement for Buildings 100 to 500 of Northwood Elementary School, 2760 East Trimble Road, San Jose, California.

B. Project Description: The following brief description applies only to the roof-related work of this project and is not intended to limit or totally define the scope of Work. Refer to the Contract Documents for the entire scope of Work.

1. Roof Replacement:

a. Remove existing built-up roofs and sheet metal flashings as shown on the Drawings.

b. Install new built-up roof systems and sheet metal flashings.

c. Paint new gutters, sheet metal flashings, and soffits.

1.03 PROJECT CONDITIONS

A. Take necessary precautions to create minimum disturbance or disruption in adjacent occupied buildings. Comply with all reasonable restrictions or limitations imposed by the owner to assure continued use of buildings during construction.

B. Provide safety precautions to separate the work area(s) from pedestrian or vehicular traffic and to prevent damage to the building, its occupants and the surrounding areas. Observe all applicable O.S.H.A. and California State O.S.H.A. requirements.

C. Supply labor and equipment to accomplish the Work.

D. Temporary construction will not be allowed. Schedule execute and coordinate work without exposing the building's interior or its contents to inclement weather. Repair or replace items damaged caused by Contractor's negligence.

E. Provide ½-inch thick plywood panel walkways for traffic on these roof areas and for surface protection from sheet metal and plumbing work.

F. The Contractor shall make the buildings with roof removed watertight; this will be an addition to the scope of work. The Contractor shall notify the Owner and submit a cost for approval prior to starting work.

G. Supply shoring to brace and support the structure and facilities affected by the work. This includes heating and air handling ducts, exterior lighting, rooftop equipment, vent pipes, and items supported by the roof decks to be removed or replaced. Supply all temporary walkways and ramps necessary to remove existing decking systems and install the replacement deck materials.

H. Perform all work in accordance with applicable Federal, State and local code requirements.

I. Workmanship and materials shall be in accordance with manufacturer's instructions and Code requirements. Specification requirements that exceed the minimum requirements of the manufacturer take precedence.

J. Coordinate the work in this Section with other Sections, including preparatory work, building protection, daily clean-up and protection of building occupants and contents.

K. Supply labor and equipment necessary to maintain a clean environment in the interior and exterior building and site areas around the construction.

1.04 EMERGENCY RESPONSE

A. The Contractor shall provide the Owner with after-hours (24 hour), emergency telephone numbers of the Contractor's Superintendent and Foreman.

B. The Contractor must respond to emergency situations or calls within two (2) hours.

1.05 CONSTRUCTION SCHEDULE

A. Refer to Division 1 Section "Construction Progress Documentation."

B. The Contractor shall schedule periodic site visits during construction by the Roofing Manufacturer that provides the warranty. Visits by the Manufacturer's Representative shall be made during the pre-construction conference, one week into the start of construction, at project completion and as requested by the Owner. The Contractor is responsible to notify and obtain acceptance from the Membrane manufacturer on detail changes that may affect the roof system warranty.

1.06 SCHEDULE OF VALUES

A. Refer to Division 1 Section "Payment Procedures."

B. Provide a line item breakdown of construction labor and materials costs for each roof area.

C. Provide line item values for Quantity Allowances and Unit Prices Work

D. Utilize the Owner's form to prepare and submit the Schedule of Values.

1.07 WORK HOURS

A. Comply with City of San Jose Ordinance.

1.08 DIMENSIONS AND QUANTITIES

A. Verify dimensions and quantities in the field prior to bid submission. The Project Plans and Drawings have been compiled from various sources and may not reflect the actual field conditions at the time of construction.

B. The Contractor is responsible for means and methods of construction, and will make necessary investigations, including core samples and take necessary precautions to supply, fabricate, and install work in accordance with the construction documents.

C. Unfamiliarity with existing project conditions will not be considered for additional compensation.

D. In case of inconsistency between Drawings and Specifications or within either document, the Owner shall decide the quality and quantity of work.

1.09 GUARANTIES AND WARANTIES

A. Roof Installation:

1. Refer to Section 07 51 05 – Built-Up Bituminous Roofing.

1.10 CLEAN-UP

A. Clean, restore and/or replace items stained, dirtied, discolored or otherwise damaged due to the Work, as required by the Owner's Representative.

B. Clean roof, building (interior and exterior), and surrounding areas so they are free of trash, debris and dirt caused by, or associated with the Work.

C. Clean out drain leaders and piping to the point where it exits the site. Water test all roof drains, downspouts, gutters and overflows prior to and after construction by running water from a hose into each drain, gutter overflow or downspout in the presence of the Owner's Representative.

D. Sweep site and paved areas clean daily.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION

SECTION 02 41 05

SELECTIVE DEMOLITION

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. Demolition of and removal of roof systems and deteriorated wood decking.

B. Demolition of and removal of exterior finishes to perform the roofing aspects of the modernization.

C. Protection of building interiors from dirt, dust and damage.

1.02 RELATED SECTIONS

A. Division 1 – General Requirements.

B. Appendix – Hazardous Material Abatement

1.03 SPECIAL JOB CONDITIONS

A. Roofing, exterior wall finish and sealant that is removed shall be made watertight and secure in the same day's operation.

B. Contractor will verify roof demolition scope with the Architect/Engineer prior to the start of work.

C. The site will be occupied and in use during the work.

1.04 SUBMITTALS

A. The Contractor shall submit a detailed demolition plan to the Construction Manager, outlining the means and methods to be utilized in the removal, transportation and disposal of the existing roof system and related debris. The removal plan shall also include the Contractor's proposed methods for interior and exterior protection and cleanup during removal and re-roofing operations. Identify the proposed location(s) of dumpsters.

1.05 EQUIPMENT

A. Conveyances: Buggies or wheelbarrows used on roofs shall be limited to 3/8 cubic yard capacity.

B. Chutes: Provide enclosed chutes for debris transfer from the roof vertically for a distance of 10 feet or more. Do not extend chutes in an unbroken line for more than 20 feet, without substantial breaks at intervals not greater than 20 feet. Debris shall not spill from the bottom of the chute directly onto the ground. Direct chutes into an approved construction debris container. Provide a hose with a nozzle connected to an adequate water supply, near chute outlet to wet debris as necessary for dust control.

C. Hoists/Cranes: Provide hoists or cranes to remove debris and transport materials to and from the roof. All materials shall be properly secured to prevent loose materials or debris from breaking loose from hoisting apparatus. Debris to be transported from the roof shall be placed directly in approved construction debris containers. Proper protection of wall areas for their entire height shall be provided in the form of heavy duty tarps secured or affixed to exterior walls directly adjacent to or under the area of hoisting.

D. The use of “bobcat” type removal equipment is prohibited.

E. Mechanical cutting equipment: Roof cutting equipment shall have an operable blade depth setting mechanism, in order to control the cutting depth of the blade and alleviate the potential of damage to the structural deck.

PART 2 – MATERIALS

NOT USED

PART 3 – EXECUTION

3.01 PREPARATION

A. Provide, erect, and maintain temporary barriers and security devices as required for performance of the Work.

B. Protect existing landscaping materials, appurtenances, structures, and finish materials that are not to be demolished.

C. Mark location of utilities.

D. Protect existing structures and paving from damage or displacement.

E. Where nature of demolition requires their use, erect and maintain trash and dust chutes for disposal of materials, rubbish and debris (See Paragraph 1.05).

3.02 DEMOLITION REQUIREMENTS

A. Conduct demolition to minimize interference with adjacent occupancies.

B. Conduct operations with minimum interference to public or private accesses. Maintain egress and access at all times.

3.03 DEMOLITION

A. Disconnect, cap, and identify designated utilities within demolition areas; protect those utilities to remain from damage.

B. Remove materials to be re-installed or retained. Store and protect in manner to prevent damage.

C. Remove demolished materials and debris from site.

D. Do not burn or bury materials on site.

E. Leave site in clean condition.

F. Remove temporary work.

3.04 STORAGE AND DISPOSAL

A. Items to be retained:

1. All HVAC units, mechanical equipment, ducts, mechanical and condensate.

B. Items to be removed: As indicated on the Drawings and herein, including but not limited to the following:

1. Built-up roof systems and features as indicated on the Drawings.

C. Debris disposal:

1. All debris shall be transported to dumpsters at ground level by enclosed chute. Uncontrolled dropping of debris to ground level will not be permitted. Control visible emissions at the dumpster location by wetting the debris with a fine spray of water at the dumpster level and by providing a tarp cover over the dumpster.

2. Dispose of all debris in accordance with all applicable local, State, Federal regulations for the proper transportation and disposal of roofing materials at an approved landfill.

3.05 CLEANING

A. Clean, restore and/or replace items stained, dirtied, discolored or otherwise damaged due to the Work, as required by the Owner.

B. Clean roof, building (interior and exterior), and surrounding areas so they are free of trash, debris and dirt caused by, or associated with the Work.

C. Clean out drain leaders and piping to the point where it exits the site. Water test all roof drains, downspouts, gutters and overflows prior to and after construction by running water from a hose into each drain, gutter overflow or downspout in the presence of the Owner.

D. Sweep site and paved areas clean daily.

END OF SECTION

SECTION 07 22 05

INSULATION

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Wood fiberboard insulation and tapered edge strips.

B. Tapered and flatstock insulation.

C. Insulation at hot stack.

1.02 RELATED SECTIONS

A. Section 07 51 05 – Built-up Bituminous Roofing

B. Section 07 60 05 – Flashing and Sheet Metal

1.03 SUBMITTALS

A. Submit a tapered insulation layout drawing (full size: 24 inch x 36 inch) from the insulation manufacturer. The drawing should include an outline of the roof area and locations of drains and major roof penetrations (i.e., smoke hatches and fan units). Provide a profile of tapered sections; indicate minimum and maximum thicknesses at perimeters, and R-values for the proposed insulation system. The Contractor shall verify dimensions and existing roof penetration locations to ensure proper layout and tapered insulation quantities.

B. Submit certification from each insulation manufacturer stating the roof membrane manufacturer for the specified warranty accepts the submitted products.

PART 2 - PRODUCTS

2.01 INSULATION

A. Insulation Schedule: Refer to the Drawings.

B. Flat Stock and Tapered Insulation: A rigid isocyanurate board with factory-applied fiberglass bituminous felts on both sides. Conforming to HH-I-530A (Type II, unfaced) and C1289-01, Type II, Class 1, Grade 2 with an average density of 2.0 lbs. per cubic foot. Manufacturer: Celotex Corporation, NRG Barriers or an approved equal. The board size: 4 foot by 4 foot.

C. Wood Fiberboard Insulation: A rigid, high density, monolithic, fiberboard with asphalt treatment on six sides and conforming to ASTM C208. Product & Manufacturer: Blue Ridge or approved equal. Size: 4 foot by 8 foot with a minimum thickness as indicated in the

Insulation Schedule.

D. Fiberboard Tapered Edge Strips, Crickets behind curbs and Insulation Fillers: A rigid high-density wood fiberboard, with asphalt treatment on all sides, and conforming to ASTM C208. Size: 12 inches wide, 4-feet long and have a thickness varying of 1/2 in. to feathered edge. Crickets shall provide 1/2 in. per foot slope.

E. Field Crickets: A rigid isocyanurate board with factory-applied fiberglass bituminous felts on both sides. Conforming to HH-I-530A (Type II, unfaced) and C1289-01, Type II, Class 1, Grade 2 with an average density of 2.0 lbs. Per cubic foot. Manufacturer: Celotex Corporation, NRG Barriers or an approved equal. The board size: 4 foot by 4 foot. Crickets shall provide 1/2 in. per foot slope.

F. Hot Pipe Insulation: A mineral-fiber, 3 inch thick BATT insulation conforming to ASTM C 612, Class 4 requirements, Product & Manufacturer: TIW Thermal Insulating Wool, by Owens-Corning Fiberglass Corporation.

G. Cant Strips: A rigid high-density wood fiberboard conforming to ASTM C208. Size: Vary as indicated on the Contract Drawings.

PART 3 - EXECUTION

3.01 PREPARATION

A. Install rosin sheet and base sheet on roof deck per Section 07510 – Built-Up Bituminous Roofing.

B. Prior to insulation installation, remove all dirt, debris and dust from deck surfaces with a vacuum. Broom base sheet surface clean prior to insulation installation. Insulation systems shall be installed on properly installed, clean, dry surfaces. Should surface moisture such as dew exist, the Contractor shall provide the necessary equipment to dry the surface prior to application. Do not dry with open flames.

C. Inspect insulation boards for defects, including but not limited to: broken corners, improperly adhered skins, excessive moisture content (present if insulation surface "foams" when hot bitumen is applied), dimensional irregularities, or other defects which may adversely affect the replacement roof system. Mark defective insulation boards and remove them from site.

D. Insulation shall have a minimum dimension of 12 inches and a minimum surface area of 2 square feet.

E. Contractor shall follow the asphalt guidelines stated in Section 07 51 05 – Built-up Bituminous Roofing.

3.02 INSULATION INSTALLATION

A. Wood Substrate: Install wood fiberboard and tapered isocyanurate (where occurs) insulation in full moppings of hot asphalt applied at the rate of 30 pounds per square (See Section 07 51 05). Insulation joints shall be staggered.

B. Install wood fiberboard crickets at the upslope of all roof curbs. Crickets shall be constructed to ensure a minimum slope of 1/2 inch per foot along the valley towards the drainage point.

C. Field crickets: Install wood fiberboard over tapered isocyanurate insulation. Crickets shall be constructed to ensure a minimum slope of 1/2 inch per foot along the valley towards the drainage point.

D. Insulation boards set in hot asphalt shall immediately be "walked in" to assure full embedment. Poorly adhered boards and boards with gaps greater than 1/4 inch shall be removed and replaced.

E. Install flame resistant insulation around hot pipe from deck level to storm collar. Do not over-compress insulation during installation.

END OF SECTION

SECTION 07 51 05

BUILT-UP BITUMINOUS ROOFING

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Rosin and base sheet installation.

B. Built-up roof installation (three plies and Title 24-compliant coated cap sheet).

C. Installation of wood nailers (spaced at 8 ft. o.c.) for backnailing on roof slopes of 1-1/2 in./ft. or greater.

D. Backnailing of felt plies and cap sheet for roof slopes 1-1/2 in./ft. or greater.

E. Strapping of felt plies and slopes 1-1/2 in./ft. or greater.

1.02 RELATED SECTIONS

A. Section 07 22 05 – Insulation

B. Section 07 60 05 – Flashing and Sheet Metal

C. Section 07 90 05 – Sealants

1.03 PROJECT CONDITIONS

A. Take necessary precautions to create minimum disturbance or disruption in occupied buildings. Comply with all reasonable restrictions or limitations imposed by the owner to assure continued use of buildings during construction.

B. Provide safety precautions to separate the work area(s) from pedestrian or vehicular traffic and to prevent damage to the building, its occupants and the surrounding areas. Observe all applicable O.S.H.A. and California State O.S.H.A. requirements.

C. Supply labor and equipment to accomplish the Work.

D. Temporary construction will not be allowed. Schedule, execute and coordinate work without exposing the building's interior or its contents to inclement weather. Repair or replace items damaged caused by Contractor's negligence.

E. Provide ½-inch thick plywood panel walkways for traffic on completed roof areas and for surface protection from sheet metal and plumbing work.

F. The Contractor shall make the buildings with roof removed watertight at the end of each day's operation.

G. Supply shoring to brace and support the structure and facilities affected by the work. This includes heating and air handling ducts, exterior lighting, rooftop equipment, vent pipes, and items supported by the roof decks to be removed, or replaced. Supply all temporary walkways and ramps necessary to remove existing decking systems and install the replacement deck materials.

H. Performed all work in accordance with applicable Federal, State and local code requirements.

I. Workmanship and materials shall be in accordance with manufacturer's instructions and Code requirements. Specification requirements that exceed the minimum requirements of the manufacturer take precedence.

J. Coordinate the work in this Section with other Sections, including preparatory work, building protection, daily clean up and protection of building occupants and contents.

K. Supply labor and equipment necessary to maintain a clean environment in the interior and exterior building and site areas around the construction.

L. The Contractor shall provide the Owner with after-hours (24 hour), emergency telephone numbers of the Contractor's Superintendent and Foreman.

M. The Contractor must respond to emergency situations or calls within two (2) hours.

N. The site will be in use during the work.

O. Protect adjacent roofs from damage. The Contractor will be responsible for damage to existing roof.

1.04 SPECIAL JOB CONDITIONS

A. Roofing and flashings shall not be applied when ambient temperature is less than 40^{o} F unless approved in writing by the Owner and Materials Manufacturers.

B. All surfaces to receive the membrane and flashings shall be thoroughly clean and dry. Should surface moisture such as dew exist, the Contractor shall provide the necessary equipment to dry the surface prior to application. The use of open flames is strictly prohibited.

C. Prior to the application of roofing, all dirt, debris and dust shall be removed from the deck or substrate surfaces by brooming and vacuuming.

D. The Contractor shall strictly abide by all applicable safety requirements. This includes all CalOSHA, and other applicable requirements, regarding work with hot asphalt, equipment, tankers, and kettles for workers and building occupants.

E. Provide two fully charged operating fire extinguishers at each asphalt tanker or kettle location at all times. A designated kettle operator must be within 20 feet of the kettle at all times during its operation and perform no other duties than tending the kettle. Heat asphalt in a kettle designed to prevent contact of flame with surfaces in contact with asphalt. Equip tankers with visible thermometer and thermostatic controls set to asphalt temperature limits specified herein. Keep controls in working order and calibrated. Equip kettles and tankers with visible thermometer and thermostatic controls set to the specified asphalt temperature limits. Use immersion thermometers, accurate within a tolerance of ± 2° F (1° C), to check temperatures of the asphalt each hour. Should temperatures exceed specified limits, remove asphalt from the site. Refer to Section 01500 for supplemental requirements.

F. Temporary waterstops shall be installed at the end of each day and shall be removed before proceeding with the next day's work. Water stop materials shall be compatible with all materials they contact.

G. The Contractor shall provide the necessary temporary protection and barriers to segregate the work area and to prevent damage to adjacent building roof and wall areas.

H. Cover building wall areas with non-flammable canvas tarps at asphalt pumping locations.

I. Erect warning lines and barriers to segregate the work/pumping areas from vehicular and pedestrian traffic.

J. Completed roof areas shall be protected from traffic. Work shall be coordinated to prevent this situation by working towards the roof edges and access ways. Should access to completed roof areas be necessary, the Contractor shall provide protection for the trafficked areas. Do not allow workers to traffic on felt plies while asphalt is hot and fluid.

K. All stripping membranes, modified bitumen base flashings, and organic glass mat capsheet must be installed concurrently with the roof membrane installation work, and must be complete and up to date by the end of each work week (i.e. Friday or Saturday). Should unforeseen conditions preclude application of cap sheet, the finished roofing plies shall be glaze coated with hot asphalt prior to departure from the site on a daily basis.

L. All asphalt heating equipment shall have functioning fume capturing devices installed and operational at all times during heating operations. Contractor may use asphalt tankers in lieu of kettles with fume capture devices.

M. Low slope roofs: After three-ply membrane installation and prior to cap sheet installation, water test the roof, as directed by the District's representative, to identify areas of ponding water.

1.05 SUBMITTALS

A. Submit manufacturer and supplier literature for items specified under Part 2 of this Section.

B. Submit a confirmation letter from the roofing manufacturer, stating the manufacturer reviewed and takes no exceptions to the Contract Documents. Discrepancies between the Contract Documents and the roofing manufacturer requirements must be presented by the Contractor and membrane manufacturer at the time of submittals for resolution by the Owner's Representative.

C. Submit manufacturer letter certifying the Contractor is an approved and recommended applicator.

D. Submit manufacturer certification for asphalt delivered to site.

1.05 WARRANTY

A. Upon completion of the Work and prior to final payment, the Contractor shall submit the following warranties:

1. The Contractor shall guarantee that all work is free from defects of workmanship and materials for a period of two (2) years from the date of completion and acceptance by the Owner, and remedy defects developed during that period, without charge to the Owner.

2. The Contractor shall provide the Owner with a fifteen (15) twenty year, no dollar limit (NDL) Manufacturer systems warranty commencing on the day of project acceptance by Owner. The Contractor shall submit a sample of the warranty for review before the preconstruction conference.

1.06 DIMENSIONS AND QUANTITIES

A. Verify dimensions and quantities in the field prior to bid submission. The Project Plans and Drawings have been compiled from various sources and may not reflect the actual field conditions at the time of construction.

B. The Contractor is responsible for means and methods of construction, and will make necessary investigations, including core samples and take necessary precautions to supply, fabricate, and install work in accordance with the construction documents.

C. Unfamiliarity with existing project conditions will not be considered for additional compensation.

D. In case of inconsistency between Drawings and Specifications or within either document, the Owner shall decide the quality and quantity of work.

PART 2 - PRODUCTS

2.01 GENERAL

A. Provide products compatible with the substrates and other assembly components. Materials shall be approved for UL Class A fire rating on combustible roof decks with a slope less than 3 inches per foot and meet FM 1-75 (minimum) wind uplift requirements.

2.02 FELTS AND ROLLED PRODUCTS

A. Sheathing Paper: Red rosin paper, ASTM D459.

B. Coated Glass Mat Base Sheet: GAFGlas #75 by GAF Materials Corporation or approved equal, ASTM D4601

C. Glass Fiber Ply Sheets: GAFGlas FlexPly 6 by GAF Materials Corporation or approved equal, ASTM D2178.

D. Reinforcing Ply: Prefabricated styrene butadiene styrene (SBS) modified bitumen sheet, 4 mm thick minimum, weighing 88 pounds per square, reinforced with a non-woven polyester mat. Product and manufacturer: Ruberoid MOP Smooth by GAF Materials Corporation or an approved equal, ASTM D-6164, Type 1.

E. Flashing Sheet: Prefabricated styrene butadiene styrene (SBS) modified bitumen flashing sheet, 120 mil thick minimum, weighing 101 pounds per square, reinforced with a non woven glass mat, surfaced with fine mineral granules and elastomeric coating, fire-rated and Title 24 compliant. Product and manufacturer: Rubberoid Energy Cap SBS 30 FR Roof membrane by GAF Materials Corporation or an approved equal, ASTM E903 and E408.

F. Cap Sheet: An inorganic glass mat, weighing a minimum of 73 ~~75~~ pounds per square, with top surface of elastomeric coated granules, and back surface of fine silica, fire-rated, Title 24 compliant. Product and manufacturer: GAFGLAS_EnergyCap, a BUR Mineral coated cap sheet, by GAF Materials Corporation (CRRC 0676-0021) or an approved equal, ASTM 3309, ASTM E903 and ASTM E408.

G. Sheet Membrane: A 40 mil thick self-adhering modified bitumen membrane with release-paper backing, supplied in 3-foot wide rolls. Product and manufacturer: Vycor Ice and Water Shield by GCP Applied Technologies, or an approved equal.

2.03 INSULATION

A. Refer to Section 07 22 05 – Insulation.

2.04 BITUMENS

A. Asphalt: ASTM D312, Type III. Carton asphalt shall be labeled with packager's name, equiviscous temperature (EVT), finish blowing temperature (FBT), and flash point (FP). Bulk asphalt delivered to site shall be accompanied by the shipper's bill of lading indicating batch number, EVT, FBT and FP.

B. Flashing Cement: ASTM D4586, Type I and ASTM 3409. Material shall be asbestos-free and vertical grade. Product and Manufacturer: Leak Buster, Matrix 201 Premium SBS flashing cement by Building Materials Corporation of America or an approved equal.

C. Asphalt, solvent and rubber-based primers: As recommended and manufactured specifically for the membrane system or components to be installed.

2.05 REFLECTIVE COATING:

Energy Cote Coating by Building Materials of America or approved equal, ASTM D-2196, ASTM D-1475, ASTM E-1644, ASTM C-1549 and ASTM E-408.

2.06 FASTENERS

A. Base sheet-to-wood deck and felt plies/cap sheet-to-wood nailers: 1-1/2 inch long, annular-threaded shank nails with integral 1 inch caps, hot-dipped galvanized per ASTM A153.

B. Roof membrane-to-wood nailer: 11 gauge, 1-1/2 inch long, large head, annular threaded shank nails with integral 1 inch caps, hot-dipped galvanized per ASTM A153.

2.07 ACCESSORIES

A. Fabric mesh: Woven and treated glass fabric, ASTM D1668, Type I.

B. Granules: Energy White granules. Size and color to match cap sheet and flashing sheet.

C. Walk pads: 1/2 in. thick, bituminous mineral-surfaced pads.

2.08 WOOD NAILERS

A. Plywood nailers: APA Grade C-D plugged, Exterior, treated 1/2 inch thick.

PART 3 - EXECUTION

3.01 GENERAL WORKMANSHIP

A. Comply with the written instructions of the insulation and roof membrane manufacturers and these Specifications. No additional compensation will be granted to the Contractor to meet the requirements of this Specification.

B. Do not dilute any material with a solvent or dilutant unless approved by the Owner in writing prior to use.

3.02 BASE SHEET

A. Install a single layer of rosin paper to the entire roof deck. Provide 2-inch side laps and 6 inch head laps. Nail in place.

B. Install base sheet with 4-inch side laps and 6-inch head laps over the rosin paper. Allow base sheet to relax 20 minutes prior to nailing.

C. Secure base sheet with the specified fasteners as listed below:

1. Perimeter: 8 inches on center

2. Head laps: 6 inches on center

3. Field: 2 rows spaced at 11 inches with fasteners at 16 inches on center.

3.03 NAILER INSTALLATION

A. Install continuous plywood nailers 8 foot on center perpendicular to the slope, in the field of the roof deck (for slopes 1-1/2 inch per foot and greater), at perimeter roof edges, and at ridges both sides. Chamfer plywood blocking at ridges to meet flush without gaps.

B. Plywood nailers shall butt tight without gaps against insulation boards and shall be straight and true.

C. Secure plywood nailers with ring shanked nails spaced 16 in. o.c. in a staggered pattern. Install two nails minimum at each end to prevent cupping or lifting of the plywood.

3.04 INSULATION INSTALLATION

A. Refer to Section 07 22 05.

3.05 ASPHALT APPLICATION

A. Do not exceed the application kettle temperatures specified for the asphalts to be used. Refer to the equiviscous temperature (EVT), finish blowing temperature (FBT) and flash point (FP) temperature data published by the manufacture when heating and setting asphalt.

B. Temperature variance of Type IV asphalt: Apply asphalt when asphalt temperature is within ± 25° F of the EVT as published by the manufacturer. Do not heat asphalt for more than four hours above the FBT or 475° F; whichever is lower.

C. The Contractor shall bear full responsibility for removal of asphalt from the site that has exceeded the temperature restrictions cited above and will ensure this asphalt is not included in any of the Work.

3.05 ASPHALT PRIMER

A. Masonry and sheet metal surfaces in contact with bituminous materials, shall be primed with an asphalt primer prior to roofing or flashing installation. Apply primer by brush at a rate of 100 square feet per gallon with no bare spots. Allow primer to dry thoroughly prior to installation.

3.06 MEMBRANE

A. Install the membrane over completely installed and prepared insulation surfaces.

B. Use 12 inch, 24 inch and 36 inch wide starter strips, followed by full width sheets. Sheets shall lap so that the direction of the water flow is over, and not against the laps. Provide 12 inches minimum end laps.

C. Lap each ply 17 inches minimum over the preceding sheet in solid moppings of asphalt for the full width of the sheet. Asphalt mopping shall be 25 pounds per ply, per square of roof area. Broom each ply in place while asphalt is still hot. Do not traffic the new roof system during brooming or the roofing felt installation. Broom heads shall be a minimum of 36 inches wide. All asphalt applications shall extend past the end laps and side laps.

D. For slopes 1-1/2 in. per foot or greater, apply plies parallel to the direction of the slope (“strapping method”).

E. For slopes 1-1/2 in. per foot or greater, back nail each ply to the underlying nailers with fasteners at 8 feet on center. Locate fasteners 18 inches from the back edge of each ply.

F. Defects such as bare spots, dry laps, fishmouths or wrinkles shall be repaired. Cut and remove defective portion of membrane, and patch as shown on Drawings.

G. Do not use rolls with frayed edges, oval shaped rolls, or rolls with similar defects that may inhibit embedment. Remove these rolls from the job site.

H. Install an additional 72-inch ply within waterways and along ridges.

I. Install additional plie in depressed areas of the roof deck. Some locations are shown on the roof plans; include depressions found during construction. For bidding purposes, assume 1,000 square feet.

3.07 REINFORCING PLY

A. Set reinforcing plies in hot asphalt as shown on the Drawings. Provide 4-inch laps and stagger laps. Ensure membrane is solidly adhered with no voids.

B. Provide an additional reinforcing strip at vertical corners lapped 3 inches onto each vertical side and 3 inches onto horizontal built-up membrane. Nail the tops of base flashings with the specified fasteners 6 inches on center.

3.08 CAP SHEET

A. Perform all repairs of the defects in the membrane and reinforcing plies and ensure surfaces are free of sawdust, dirt, insulation debris and other contaminants prior to starting application.

B. Lay cap sheets perpendicular to water flow, starting at the low point and working to the high point overlapping successive plies upslope. Unroll and allow the cap sheet relax prior to setting in hot asphalt. Provide 2 in. side laps and 9-inch head laps; stagger head laps 26 in. Align the granulated side of the sheet over the selvedge side of the adjacent sheet. While maintaining alignment, reroll approximately one-half of the dry cap sheet. Cap sheet sections shall have a maximum length of 12 feet.

C. Apply a full mopping of asphalt at the rate of 25 pounds per 100 square feet in front of the rolled membrane. Unroll and embed felt into hot asphalt, maintaining the leading edge of the roll within 24 inches of mopped asphalt. Apply even pressure with stiff bristle broom directly behind roll to ensure full adhesion and visible bleed out of asphalt at side and end laps. Avoid all bleed out of more than one inch. Distribute granules on hot asphalt bleed out directly behind membrane applicable to ensure complete color uniformity of cap sheet surface.

D. Alternate Method: Cut cap sheet into 12-foot long sections maximum. Align with application surface and coat back of cap and receiving substrate with hot liquid asphalt. Immediately place sheet into place and broom to assure bonding.

E. For slopes 1-1/2 in. per foot or greater, backnail the cap sheet at each underlying nailer with two rows of nails 3-inches apart on 3-inches centers staggered.

F. Cap sheets shall be applied free of wrinkles, creases, fishmouths, or voids. Maintain alignment of sheets utilizing marked lap lines. Should the lap lines become misaligned during installation, cut the sheet and establish a new end lap. Do not attempt to realign a partially adhered membrane roll.

G. Inspect the installed cap sheet for defects. Cut the cap sheet at a defect (e.g., wrinkle, crease, fishmouth) and allow cut area to relax. Set a full width strip of cap sheet patch in a bed of roof cement over the defect. The patch shall extend 6 inches beyond the cut. Unbonded lap seams of more than 1/2 in. wide shall be embedded in cold adhesive troweled under the unbonded membrane. Reapply granules to repairs as needed.

H. Apply cold elastomeric coating and granules as required to assure mineral granules completely cover surface.

I. Apply elastomeric coating over asphalt bleed out according to manufacturer's recommendations. Ensure cap sheet is clean and free of debris prior to reflective coating application.

3.09 FLASHING SHEET

A. Set flashing sheet in continuous mopping of hot asphalt at rate 25 pounds per 100 square feet. Use small mops. Apply asphalt to substrate and back of flashing sheet.

B. Set the flashing sheet in place and broom, applying even pressure throughout the sheet. Ensure that the sheet is solidly set in asphalt with no voids or bridging. Provide 3 in. minimum laps and stagger laps with previously installed sheets. Wrap membrane 3 in. minimum around corners and provide an additional membrane strip.

C. Apply a 6 in. wide asphalt-saturated fabric set in flashing cement at relief cuts, inside and outside corners. Cover fabric with flashing cement and apply granules.

D. Broadcast granules on exposed hot asphalt along flashing edge. Reapply granules with cold-process adhesive at bare spots or unadhered locations.

E. Apply reflective coating over flashing sheet according to manufacturer's recommendations. Ensure flashing sheet is clean and free of debris prior to reflective coating application.

3.10 SHEET MEMBRANE

A. Prepare surfaces to receive sheet membrane with primer as recommended by the manufacturer. Do not prime more than can be covered by sheet installation in one day.

B. Install sheet membrane as indicated in the Drawings. Remove release paper backing, set membrane into place, and roll down smooth with a metal roller.

C. Provide 3 in. minimum head laps and 2 in. vertical laps.

3.11 DRAIN BOWL FLASHING

A. Install roofing felts as shown on the Drawings. Confirm that lead flashing is primed and set in bed of flashing compound prior to installing membrane flashings. Trim felts flush with drain bowl flange.

3.12 ELASTOMERIC COATING APPLICATION

A. Ensure the roof surface is free of surface contaminants and loose particles. Power blow or power wash as required.

B. Apply matching granules to the asphalt bleed-out at seams prior to coating application.

B. Apply coating directly to exposed asphalt.

C. Apply coating to asphalt bleed-out (including flashings and penetrations) at a rate of one and one-half (1) gallon per square. Do not apply coating over primer until it is tacky to the touch.

E. Apply coating to walkpads, flashings and penetrations at a rate of one and one-half (1) gallon per square. Do not apply coating over primer until it is tacky to the touch.

3.14 TEMPORARY PROTECTION

A. Should precipitation threaten during the work day, protect unfinished, exposed roof membrane and flashing components.

B. Provide temporary cut-offs around exposed membrane edges and incomplete flashing locations.

C. Temporary cut-offs shall be 2 plies of fiberglass roofing felts set in asphalt and shall extend onto the adjacent roofing a minimum of 18 inches. Set the felts onto the existing roof in a full mopping of asphalt and glaze coat top only. Remove all temporary cut-offs prior to continuing work.

END OF SECTION

SECTION 07 60 05

FLASHING AND SHEET METAL

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Sheet metal flashings shown on the Drawings

1.02 RELATED WORK

A. Section 07 51 05 – Built-up Bituminous Roofing

B. Section 07 90 05 – Sealants

1.03 REFERENCES

A. ASTM A153 – Zinc Coating Hop Dip

B. SMACNA – Architectural Sheet Metal Manual

C. MIL-S-687ZB – General Specifications for Soldering Process

D. AWS D1.1 – Structural Welding Code

1.04 SUBMITTALS

A. Submit three (3), 6 inch by 6 inch samples, of each type and thickness of sheet metal to be used in the construction.

B. Submit three (3), samples of gutter assembly and flashings to be used in the construction.

C. Submit shop drawings with dimensions of all sheet metal details.

D. Submit mill certification.

E. Submit manufacturer literature for all accessory items in Part 2 of this Section.

1.05 STORAGE

A. Stack performed material to prevent twisting, bending, or abrasion, and provide ventilation.

B. Prevent contact with materials during storage, which may cause discoloration, staining or damage.

PART 2 - PRODUCTS

2.01 SHEET MATERIALS

A. Sheet Metal

1. 18 and 22 gauge galvanized steel: ASTM A123 and A525.

B. Lead

1. Minimum weight of 4 pounds per square foot.

C. Steel bars

1. ASTM A36.

2.02 FINISHES

A. See Section 09 91 00 – Painting.

2.03 ACCESSORIES

A. Fasteners

1. Sheet metal-to-wood blocking: No.12, 1-1/2 inch minimum long Stubbs stainless steel nails, annular-thread shank.

2. Sheet metal-to-sheet metal: No. 10, 1 inch long stainless steel sheet metal screws with metal capped neoprene washers.

3. New flashing-to-existing: Stainless steel pop rivets.

4. Unistrut: 3/8 inch diameter lag bolts, 3 inch long minimum.

B. Solder

1. 50% tin and 50% lead.

2. Flux: ASTM B32

C. Sealant and Backer Rod

1. Refer to Section 07 90 05 – Sealants.

D. Miscellaneous

1. Band clamps: Stainless steel, ½ inch wide, screw adjustable clamps.

2. Insect screen: Stainless steel 12 x 12 mesh, 0.028 inch 1/4 inch square mesh.

3. Cold galvanized compound: Zinc-rich, spray-applied compound.

4. Drain and Piping

   a. Drain: Z-125 by Zurn Industries or approved equal.

   b. Pipe: Schedule 40, 3 in. inside diameter; wall thickness of 0.25 in.

2.04 FABRICATION SCHEDULE

A. All sheet metal to be 22 gauge galvanized steel except as noted below.

B. 18 gauge Galvanized Steel

1. Structural Spanning Stiffening Plates

C. Lead

1. Plumbing Vent Flashings and Caps

2. Lead Drain Flashing

2.05 FABRICATION

A. Form sections true to shape, accurate in size, square and free from distortion or defects.

B. Form pieces to maximum length of 8 feet.

C. Mechanically fasten and solder watertight joints, splices and transitions which are not designed for expansion.

1. Fasten metal for strength and watertightness by solid riveting, welding or forming double lock seams.

2. Sealant for water tightness by soldering: after soldering, immediately remove all traces of acid or flux with appropriate neutralizer, followed by repeated washing and scrubbing.

3. Sealant-filled joints may not be substituted for solder joints: Use sealant as indicated on the Drawings.

D. Do not fabricate any sheet metal components without approved shop drawings and fabrication samples.

PART 3 - EXECUTION

3.01 INSPECTION

A. Field measure site conditions prior to fabricating Work Notify Architect/Engineer immediately of any inconsistency between existing conditions and the drawings.

B. Beginning of installation means acceptance of existing conditions.

3.02 PREPARATION

A. Allow substrates to dry thoroughly. Do not proceed with flashing application if moisture content of exposed wood is above 19%.

B. Clean debris from all substrates.

3.03 INSTALLATION

A. General

1. Proceed with sheet metal installation in conjunction with roofing and flashing in each area.

2. Do not dilute primers, coatings, or sealants.

3. Keep containers closed except when removing materials from them.

4. Field fabricate sheet metal following the same criteria set forth in Paragraph 2.05 – FABRICATION.

5. Except as otherwise specifically shown on the Drawings or approved shop drawings, conform to the drawing details included in the SMACNA manual.

6. Comply with Military Specification MIL-S-6872B entitled, "General Specifications for Soldering Process" when forming soldered joints. Use conduction soldering methods. Areas to be joined shall be cleaned of all oil, grease, pencil marks, paint, dirt or other foreign substances. Remove all burrs using files, grinding stones or other methods. Hold parts in place using clamps, jigs and supports or by self-fixturing. If parts are tack-soldered to hold them in place, the area of tack-soldering shall be reworked into the final soldering. Parts cannot be allowed to move during the soldering process.

7. All corners, transition and termination pieces shall be mechanically fastened and soldered to provide strength and a weatherproof connection.

8. Apply sealant over the head when using pop rivets for fastening

9. All sheet metal edges shall be hemmed 1/4 inch minimum.

10. Roof deck flanges shall be 4 inches wide minimum.

11. Set roof flanges in roof cement and nail 3 inches on center staggered.

12. Prime and flash all roof flanges (top and bottom) in accordance with this Specification.

13. Flux shall be applied to all surfaces that will receive solder. Flux-cored solder shall not be used. Flux shall be fluid when heated and be effective in removing oxides and other impurities from the joint. Flux should be readily displaced by the molten solder.

14. Areas to be joined shall be heated above the liquious temperature of the solder. To deliver maximum heat, the copper bit of the soldering iron shall be applied at the right angle so that the flat side of the iron's bit provides maximum contact area. Solder shall be applied to the joint and not the bit of the iron. Allow solder to flow in place to provide a minimum 1 inch final width of solder over the joint. Joint shall not be disturbed until it has been allowed to completely cool. After soldering, completely remove all flux and acid by washing and scrubbing with a neutralizing agent.

B. Hook Strips

1. Hook strips shall be formed with a 3 inch face and a 3/4 inch kick, bent out at a 60° angle to the face (or 30° to the wall).

2. Secure continuous hook strips to wood blocking with nails spaced at 6 inches on center.

3. Provide 1/8 inch butt joints between hook strip sections.

C. Securement Clips

1. Securement clips shall be 6 inches long, 2 inches wide, and hemmed along each side of the long dimension.

2. Secure clips to substrate with specified fasteners. Use a minimum of two (2) clips. Space clips 32” o.c. minimum.

3. Bend clips a minimum of 1 inch over bottom drip edge of counterflashing and crimp tightly.

D. Counterflashing

1. Install counterflashing in accordance with approved shop drawings and manufacturer's product data to comply with specified performance

requirements. Reglet and counter flashing components shall be true to line, without buckling, creasing, warp or bind in finished surfaces.

2. Coordinate counterflashing at roof surfaces with roofing work to provide weather tight condition at roof terminations.

3. Isolate dissimilar materials to prevent electrolysis. Separate bituminous coating.

4. Secure counterflashing using continuous cleats, clips and fasteners in accordance with product data and as indicated.

E. Skirt Flashing

1. Skirt flashings shall be formed with a 4 inch face and a ¾ inch kick, bent out a 60º angle to the face (or 30º to the wall).

2. Secure skirt flashings to the existing counterflashings with stainless steel rivets at all areas where existing counterflashings are being reused. Clean existing counterflashing and apply sealant over rivets.

F. Gravel Stop and Edge Metal

1. Secure continuous hook strips with the specified fasteners as previously specified.

2. Form gravel stop/edge metal cover plates to the dimensions indicated.

3. Apply asphalt primer to both the top and bottom sides of the roof deck flanges.

4. Provide 6 inch wide cover plates, set in full bed of sealant over all 1/8-inch butt joints in sheet metal sections. Hem edges of cover plates to fit snugly against fascias. Stagger butt joints between the hook strips and the fascias.

G. Sleeve Flashing and Storm Hoods

1. Storm hood and sleeve flashing shall be formed with locked and soldered seams. Sleeves shall have integral deck flanges with hemmed edges to the configurations shown on the Drawings. Storm hood shall counterflashing sleeves flashing 3 inches, minimum.

2. Secure sleeve flashings to wood blocking and flash into roof system.

3. Storm hood shall be secured to exhaust pipe with stainless steel band clamp. Set storm hood in full bed of sealant.

H. Vent Pipes

1. Provide new vent pipe sleeve with integral roof deck flange and cap. All seams shall be locked and soldered.

2. Slide sleeve over vent pipe and secure and flash flange to wood blocking. Set cap in full bed of sealant over top of vent pipe.

3. Prior to installing flashing extend vent pipes as required in accordance with acceptable plumbing standards and codes.

I. Stiffening Plates for Roof Drains

1. Secure stiffening plates at drain bowl and roof deck locations with screws spaced at 1 per 2 square feet of plate surface area.

J. Mechanical Unit Cover Fasteners

1. Secure existing light mechanical unit covers to wood curbs with Number 10 stainless steel wood screws with integral metal-capped neoprene washers. Install screws at 12 inches on center, maximum, with a minimum of two screws per side of curb.

2. Secure mechanical unit to curb using 1/4 inch lag bolts installed through EPDM gasketed metal cap washer. Set EPDM gasket in bed of polyurethane sealant.

K. Vent, Duct, and Fan Flashings

1. Contractor shall provide samples or shop drawing for new vent, duct, and pan flashing with sheet metal covers. Do not fabricate prior to approval of samples and shop drawings.

2. Flashings shall be fabricated to be vandal resistant with solid welds.

END OF SECTION

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SECTION 07 90 05

SEALANTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Sealant for sheet metal joints

B. Sealant for hot pipes

1.02 RELATED SECTIONS

A. Section 07 51 05 – Built-Up Bituminous Roofing

B. Section 07 60 05 – Flashing and Sheet Metal

1.03 SPECIAL JOB CONDITIONS

A. Comply with application temperatures of the manufacturer.

B. The Contractor shall utilize skilled and experienced specialty workers to install the Work. Experienced trade workers shall be utilized for all aspects of the Work.

1.04 SUBMITTALS

A. Submit Manufacturer literature, specifications and color charts for the sealants and primers.

PART 2 - MATERIALS

2.01 SEALANT

A. Metal-to-metal joints: One-part polyurethane conforming to ASTM C920 such as NP-1 by Sonneborne. Color to be selected by Owner.

B. Concealed metal-to-metal joints: One-part butyl sealant conforming to ASTM C1085.

C. Hot pipes: A non-corrosive one-part silicone, with a service temperature from -60^{o} F to +400^{o} F, such as Dow Corning 999-A or approved equal.

2.02 ACCESSORIES

A. Backer rod: Round, closed cell polyethylene with a waxed surface; size shall be sufficient to be compressed 25% to fit the joint width.

B. Primer, cleaners and similar joint preparation materials shall be as recommended by the sealant manufacturer.

PART 3 - EXECUTION

3.01 GENERAL WORKMANSHIP

A. All materials shall be stored in secure, dry locations and be protected from the environment.

B. Follow manufacturer's environmental limitations and material storage requirements.

C. Provide all devices (including heaters and insulation) necessary to maintain the correct temperature and humidity for proper curing.

3.02 CONCEALED SHEET METAL LOCATIONS

A. Provide sealant at all concealed sheet metal joints and as detailed.

B. Use full beads of sealant along entire length of joints.

3.03 HIGH TEMPERATURE SEALANT

A. Install high temperature sealant at high temperature locations where required. Provide a full bead of sealant beneath storm hood locations as detailed.

3.04 REPRESENTATIVE SAMPLING

A. Extract representative samples of new sealant joints for inspection as directed by and in the presence of the Owner.

END OF SECTION

SECTION 09 91 00

PAINTING

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Surface preparation and field application of paints for miscellaneous items listed in this specification and as indicated on the Drawings.

1.02 RELATED SECTIONS

A. Section 07 60 05 – Flashings and Sheet Metal

1.03 REFERENCES

A. ASTM D2016 – Test Method for Moisture Content of wood.

B. PDCA – Painting: Architectural Specifications Manual.

1.04 DEFINITIONS

A. Conform to ASTM D16 for interpretation of terms used in this Section.

1.05 SCOPE OF WORK

A. Exterior

1. All sheet metal flashing and miscellaneous sheet metal items.

B. Painting Schedule:

1. Items listed in 1.05A: Color to chosen by the District.

1.06 SUBMITTALS

A. Manufacturer's Instructions, including:

1. Coating application instructions.

2. Coating color charts.

3. Material Safety Sheets (MSDS).

B. Schedule for coating application.

C. Applicator's qualifications consisting of evidence showing satisfactory application of the proposed paint at a minimum of two sites. Provide contact name and telephone number for each site. Provide SSPC applicator certificate.

1.07 REGULATORY REQUIREMENTS

A. California Air Resources Board (CARB).

B. Bay Area Air Quality Management District.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to the site in sealed and labeled containers; inspect to verify acceptability.

B. Include on container label: Manufacturer's name, type of paint, brand name, lot number, coverage, surface preparation, dying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Store paint materials at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in a ventilated area, and as recommended by the manufacturer's instructions.

1.09 ENVIRONMENTAL REQUIREMENTS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

B. Do not apply exterior coatings during rain, or when relative humidity is outside the humidity ranges required by the pain product manufacturer.

C. Minimum Application Temperatures for Latex Paints: 45 degrees F for interiors; 50 degrees F for exteriors; unless noted otherwise by the manufacturer's instructions.

D. Provide minimum lighting level of 80 foot-candles measured at substrate surface.

PART 2 – PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Coating products shall not contain asbestos, zinc chromate, strontium chromate, or lead.

2.02 PRIMER

A. Metal Surfaces:

1. Type: Alkyd Metal Primer

2. Dry Film Thickness: 2.0 mils minimum per coat

3. Number of coats: one

B. Wood Surfaces:

1. Type: Acrylic Latex Primer

2. Dry Film Thickness: 2.0 mils minimum per coat

3. Number of coats: one

2.03 FINISH PAINT (Two Coats)

A. Metal Surfaces:

1. Type: Acrylic Latex

2. Dry Film Thickness: 1.5 mils minimum per coat

3. Number of coats: two

B. Wood, Concrete, and Plaster Surfaces:

1. Type: Gloss Enamel

2. Dry Film Thickness: 1.5 mils minimum per coat

3. Number of coats: two

2.04 PAINT MANUFACTURERS

A. Fuller O'Brien/ICI Paint Stores

B. Glidden Coatings and Resins

C. Pratt & Lambert

D. Sherwin Williams

E. Textured Coatings of America

2.05 ACCESSORIES

A. Etching Material: Compatible with primer and paint coating.

B. Equipment: Use coating manufacturer-approved equipment. Coating application shall be performed by brush or roller only.

C. Masking tapes, sheets, and sealants: Compatible with the materials they are applied to and shall not leave stains on the adjacent surfaces.

D. Cleaners and washes for removal of mill oil and scale: Compatible and recommended by the coating manufacturer.

E. Galvanized Iron Cleaner: Galvaprime.

PART 3 - EXECUTION

3.01 GENERAL

A. Prior to surface preparation and coating applications, remove, mask or otherwise protect all adjacent surfaces.

B. Contact Owner or Owner’s Representative for direction regarding deteriorated existing painted surfaces.

C. Spray-application of paint shall not be permitted unless approved in writing by the Owner.

D. Repair or replace items damaged in the course of painting to the Owner's satisfaction.

3.02 EXAMINATION

A. Verify that substrate conditions are ready to receive Work as instructed by the product manufacturer, where applicable.

B. Examine surfaces scheduled to be finished prior to commencement of Work. Report any condition that may potentially affect proper installation.

C. Test shop applied primer for compatibility with subsequent cover materials.

D. Do not apply finishes unless moisture content of surfaces are below the following maximums:

1. Plaster and Wood Trim: 15%, measured in accordance with ASTM D2016.

2. Gypsum Board: 12%.

3.03 PREPARATION

A. Remove dirt, scale, loose coatings and particles, grease, oil, disintegrated coatings, and other substances deleterious to coating performance for component substrates in accordance with SSPC SP-1, Power Tool Cleaning, to remove rust and loose coatings as well as to remove glossy surfaces of existing paint films.

B. Before application of coatings on existing coating surfaces with no surface defect, defined as surfaces with intact coatings that can not be removed with a putty knife, wipe the previously painted surface with a clean, dry cloth saturated with the coating manufacturer's recommended cleaning solution. Allow surface to dry.

B. Remove all mill oils and scale from galvanized sheet metal prior to painting.

C. Requirements specified herein are minimums. Comply with coating manufacture's recommendations if more stringent.

3.04 APPLICATION: METAL SURFACES

A. Verify coating compatibility by applying a 2 foot square test patch on each surface to be painted. Obtain Owner's approval on test patch before proceeding.

B. Apply coating materials to surfaces designated in this section's Scope of Work in accordance with Steel Structures Painting Council (SSPC) Paint - 1 methods. Thoroughly work coating materials into joints, crevices, and open spaces. Touch up damaged coatings before applying subsequent coats.

1. Etch all sheet metal items prior to applying primer. Apply primer and paint after repairs and mechanical fasteners have been installed.

2. Apply specified primer on the same day that the surface is cleaned. If flash rusting occurs, reclean and prime the surface prior to finish coat application.

3. Use dry film thickness gages to measure coatings.

C. Environmental Conditions - Do not apply coatings during foggy or rainy weather or under the following conditions:

1. Ambient temperature less than 5° F above dew point.

2. Below 50° F or over 95° F for alkyd coatings.

D. Drying Time - Allow sufficient time between coats, as recommended by the coating manufacturer, to permit thorough drying. Provide each coat in the condition necessary to receive the next coat.

E. Do not allow primer coats or intermediate coats to weather for more than 30 days or longer than recommended by their manufacturer, before applying next coat. Follow Manufacturer's recommendations for preparation primer coats or intermediate coats. Each coat shall entirely cover the previous coat or prepared surface with a visually perceptible difference in shade of successive coats.

3.05 APPLICATION: WOOD SURFACES

A. Prime all new wood components hidden and exposed, except for roof top blocking prior to installing. Prime face sides and back of each piece. Allow primer to dry prior to installing. Priming of new work after installation is forbidden. Prime areas of repaired cement plaster surfaces prior to painting.

B. Apply primer to all wood components to be repainted as part of this specification. Thoroughly work coating materials into joints, crevices, and open spaces. Touch up damaged coatings before applying subsequent coats.

1. Apply primer to existing wood components only after repairs and mechanical fasteners have been installed.

2. Apply specified primer on the same day that the surface is cleaned.

3. Use dry film thickness gages to measure coatings.

C. Drying Time: Allow sufficient time between coats, as recommended by the coating manufacturer, to permit thorough drying. Provide each coat in the condition necessary to receive the next coat.

D. Do not allow primer coats or intermediate coats to weather for more than 5 before applying next coat. Follow Manufacturer's recommendations for preparation primer coats or intermediate coats. Each coat shall entirely cover the previous coat or prepared surface with a visually perceptible difference in shade of successive coats.

3.06 CLEANING

A. Repair brush marks, scratches, abrasions, and minor surface defects in coating's finish in accordance with manufacturer's printed instructions.

B. Finish of repaired surfaces shall be uniform and free from blemishes and variations in color and surface texture.

END OF SECTION

APPENDIX