PROJECT DIRECTORY

EIFS EXTERIOR WALL REPLACEMENT
ED EDELMAN
CHILDREN'S COURT

OWNER:

JUDICIAL COUNCIL OF CALIFORNIA
455 GOLDEN GATE AVE.
SAN FRANCISCO, CA. 94102
(909) 940-6100 FAX (909) 940-6197

Direct all project inquiries to D C Architects:

ARCHITECT:

DC Architects
820 N Mountain Avenue, Suite 200
Upland CA 91786
(800) 985-6939 FAX (909) 985-0864

ARCHITECT:

Simpson Gumpertz & Heger
1055 W. 7th Street, Suite 2500
Los Angeles, CA 90017
(213) 271-2000 FAX (213) 617-0411

JUDICIAL COUNCIL OF CALIFORNIA PROJECT MANGER:

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Office of Real Estate and Facilities Management
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END OF SECTION

EXHIBIT "C" - SCOPE OF WORK

PART 1 - GENERAL

1.1 SECTION INCLUDES:

1.1.1 Work Covered by Contract Documents

1.1.2 Work by Others

1.1.3 Contractor Use of Premises

1.2 WORK COVERED BY CONTRACT DOCUMENTS:

1.2.1 Work Included: The work to be performed by the Contractor shall conform to the requirements of the Agreement, Project Manual, General Conditions, Special Conditions, Specifications, all sheets in Drawings and other related documents, and includes the furnishing of all supervision, labor, materials, tools, equipment, transportation, plan and services necessary therefore and incidental thereto to complete the project. The work shall consist of, but not be limited to, the following:

1.2.1.1 Provide all scope of work shown on the plans and specifications, to include all exterior building work, finish exterior building work and the description noted below;

Description

Coordination
Contractor to provide work in close coordination with Court staff, County staff, Judicial Council of California staff, and the general public to significantly minimizing interference with continuing Court operations while the demolition/removal and replacement of the EIFS assembly cladding work is being completed.

Demolition/Removal
Provide exterior gypsum sheathing and drainage EIFS assembly cladding with a continuous weather barrier membrane over the exterior sheathing. The new EIFS assembly shall replicate the existing EIFS aesthetic finish. Provide new sheet metal flashings at wall openings and at transitions between varying assemblies. Provide sheet metal copings at parapets as indicated on the drawings. Provide new sealant at wall openings, penetrations and EIFS panel-to-panel joints. Provide a continuous, Single-stage silicone sealant joint over closed-cell rods and where shown on the drawings.
At all Cement Plaster Cladding and where shown on the drawings, install a new silicone-based elastomeric coating, over the cement plaster assembly. Note that cracks over 1/16 in. will need to be routed and sealed with a silicone sealant prior to installation of the elastomeric coating.

Existing Ladder Removal and Replacement

The recladding will include removal and reinstallation of the existing steel roof access ladder located on the west elevation. The reinstallation securement of the ladder to the existing structure shall be detailed and designed by a California licensed structural engineer, submittals shall include stamped/signed shop drawings and stamped/signed calculations from the structural engineer.

1.2.1.2 Provide cutting, saw-cutting, and demolition required per the plans and/or specifications section 017329 to facilitate installation to be performed by this bid package.

1.2.1.3 Review all as-built, plans, and contact all agencies and the Architect prior to execution of work to ensure that all existing utilities within the building and building exterior walls will not be disrupted.

1.2.1.6 Provide all necessary shoring, barricades, and caution tape, to maintain safety requirements and as necessary to meet building and safety codes that are required in the General Conditions.

1.2.1.7 This bid package is to provide temporary access as required for their work. This includes scaffolding, catwalks, scissor lifts, but is not limited to the Contractor to perform all required work.

1.2.1.8 Continuous housekeeping and daily clean up is mandatory. The Contractor shall provide a separate debris box onsite and shall put all debris in debris box and/or remove debris from site at the Contractor's own expense prior to the end of the work day or as directed by the Owner's Architect. All debris boxes and containers shall be kept free of graffiti at all times. If the Contractor fails to perform daily clean up, the Owner's Architect shall order that clean up be done at the Contractor's expense.

1.2.1.9 Punch list, final clean up, and closeout for this bid package per contract construction schedule. Parties agree that delays to punch list, final clean up, and closeout would constitute a delay in project completion and, therefore, entitles the District to withhold and retain potential liquidated damages per the Contract Documents from the Contractor's progress payments.

1.2.2 Existing Site Conditions: The Contractor shall make a thorough examination of the site to determine all existing conditions affecting the work.

1.2.3 Location of Site: The new site is located at **201 CENTRAL PLAZZA DRIVE, MONTEREY PARK, CA. 91745.**

1.2.4 Work Not Included: None

1.3 CONTRACT METHOD:

1.3.1 Construct the Work under a single Lump Sum Contract.

1.4 CONTRACTOR USE OF PREMISES:

1.4.1 The Contractor shall have use of the premises for the execution of the work.

1.4.2 The Contractor shall coordinate use of the premises under the direction of the Owner's Architect.

1.4.3 Assume full responsibility for the protection and safekeeping of products under the Contract that are stored on the site.

1.4.4 Move any stored products under the Contractor's control that interferes with the operations of the Owner or a separate Site Contractor.

1.4.5 Obtain and pay for the use of additional storage or work areas needed for operations.

1.4.6 The Contractor shall assume all responsibility for parking his own and his subcontractor's vehicles at the direction of the Owner's Architect. The Contractor shall direct all material deliveries to the construction gate.

1.4.7 All District property is tobacco free, drug free, alcohol free, weapons free and graffiti free. Contractor shall enforce these rules to his crew, subcontractors and suppliers.

END OF SECTION

PART 1 - GENERAL

All applicable portions of Division 1, including the drawings and general provisions of the contract, the general and supplementary conditions and Division 1 specification sections which apply to work of this section as if printed herein.

1.1 SECTION INCLUDES: Description of requirements for materials, fabrications and installation of Miscellaneous Metal and accessory items as shown on drawings and necessary to complete the Miscellaneous Metal Work. Work to include but not be limited to the following:

1.1.1 Examine all other sections for work related to those sections which are required to be included as work of this Section.

1.1.2 Pipe railings, pipe sleeves, handrails, guardrails, and brackets.

1.1.3 Gratings at floor sinks, etc.

1.1.4 Steel roof access ladders and steel ladder up/over roof parapets.

1.1.5 Steel angle corner guards, pipe guards and rails.

1.1.6 Channel door frames.

1.1.7 Structural shapes not included in structural steel work.

1.1.8 Formed and bent plate 14 gauge and heavier.

1.1.9 Trash enclosure gates.

1.1.10 Steel trellis.

1.1.11 Metal canopy.

1.1.12 Stainless steel counters and stainless steel wire shelves.

1.1.13 Stainless steel wall panels and wainscot (20 ga.)

1.1.14 Steel angle guards at overhead roll-up doors and loading dock.

1.2 RELATED SECTIONS:

1.2.1 Section 054000 Light gauge Structural Framing

1.2.2 Divisions 22 and 26

1.3 REFERENCES AND STANDARDS:

1.3.1 ASTM A36 – Structural Steel.

1.3.2 ASTM A53 – Hot-Dipped, Zinc-Coated Welded and Seamless Steel Pipe.

1.3.3 ASTM A307 – Low-Carbon Steel Externally and Internally Threaded Fasteners.

1.3.4 ASTM A386 – Zinc-Coating (Hot-Dip) on Assembled Steel Products.

1.3.5 ASTM A501 – Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.

1.3.6 AWS DI.1 – Structural Welding Code.

1.3.7 FS TT-P-31 Paint, Oil: Iron Oxide, Ready Mix, Red and Brown.

1.3.8 FS TT-P-641 Primer Coating, Zinc Dust-Zinc Oxide (for Galvanized Surfaces).

1.4 REGULATORY REQUIREMENTS:

1.4.1 Conform to Title 24, Part 2, California Code of Regulations

1.5 SUBMITTALS:

1.5.1 Provide shop drawings for all items listed and those therein omitted, that require Architect's review and coordination prior to fabrication and erection.

1.5.2 Submit manufacturer's product data and any samples as requested by the Architect to demonstrate size, texture, welds, factory finish, etc.

1.5.3 Submit shop drawings under provisions of Section 013300. Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories.

1.5.4 Include erection drawings, elevations, and details where applicable.

1.5.5 Indicate welded connections using standard AWS welding symbols. Indicate net weld lengths.

1.6 QUALITY ASSURANCE:

1.6.1 Use skilled workers who are thoroughly trained and experienced and who are completely familiar with the requirements and methods to perform the scope of work as specified under this Section.

1.7 DELIVERY, STORAGE AND HANDLING:

1.7.1 Use all means necessary to store, handle and protect the materials of this Section before, during, and after installation.

1.8 REQUIREMENTS:

1.8.1 Field Measurements: Secure field measurements required for fabrication and installation of work. Coordinate fabrication of supports for equipment with manufacturer's printed literature and structural engineering drawings.

Measurements are Contractor's responsibility. Field alterations will not be permitted without approval of the Architect.

1.8.2 Dissimilar Metals: Where metals are in contact with concrete or other types of metals, paint contact faces of metal with heavy bituminous coating before installation.

1.8.3 Railings are to be designed to be in conformance with minimum California Building Code requirements, to resist a load of at least 200 pounds applied in any direction at any point to the top rail and also a vertical and horizontal thrust of 50 pounds per lineal foot applied to the top rail.

PART 2 – PRODUCTS:

2.1 GENERAL: Where two (2) or more identical articles or materials are required, provide products of same manufacturer. If specified materials are discontinued, furnish updated product at no additional cost.

2.2 ALL METALS must be free from any defects which would impair the strength, durability or appearance, and of the best commercial quality, for purposes intended and adequate to withstand strains and stresses to which they will be subjected. Protect metals from damage at the job, in transit, and until installed, inspected and approved.

2.3 MATERIALS:

2.3.1 Structural Steel Such as Rolled Shapes, Angles, Plates, Anchors, Clips, Etc.: Conform with ASTM A36. Standard weight block steel galvanized after fabrication.

2.3.2 Steel Tubing: ASTM A501 or 500 Grade B Seamless.

2.3.3 Architectural and Miscellaneous Steel: Mild steel.

2.3.4 Wrought Iron Bars: ASTM A207 or ASTMA 189.

2.3.5 Steel Pipe Other Than Structural Uses: Conform with ASTM A120, seamless.

2.3.6 Steel Sheet: High quality, low carbon, hot-rolled sheet with good welding and forming qualities. ASTM A446 Grade A.

2.3.7 Galvanized Sheets: Hot-dipped and tight coated steel sheet conforming to ASTM A525. Coating weight to be no less than 1.25 oz. per square foot.

2.3.8 Welded Materials: AWS-D.1; Type required for materials being welded.

2.3.9 Galvanized Rolled Shapes, Angles, Channels, Bolts, Etc.: Conform with ASTM A123.

2.3.10 Primer Paint:

2.3.10.1 General: Compatible with type and color of special or finish coatings described. in Section 099100. FS TT-P-31, Red: For shop application and field touch-up.

2.3.10.2 Touch-up Primer for galvanized surfaces: FS TT-P-641 or SSFC-20.

2.3.10.3 Cleaning Metals Prior to Priming:

2.3.10.3.1 Exterior Exposed Metals: SSPC-SP6 Commercial blast clean.

2.3.10.3.2 Interior Metals: SSPC-SP2 Hand tool clean or SSPC-SP3 Power tool clean.

2.3.10.4 Standard Shop Paint: Rust-inhibitive coating conforming to governing air pollution control requirements (AQMD).

2.3.10.4.1 Exterior Exposed Metals: High performance coating primer, to meet slip coefficient and creep requirements for classification as a Class B coating using ASTM A325 or A490 Bolt Specification, Appendix A, No. 90-97 Tneme-Zinc Primer, 2.5 – 3.5 dry mils, as manufactured by Tnemec Company, Compton, California, or equal (no known equal).

2.3.10.4.2 Interior metals: Regular metal primer, No. 10-99 V.O.C. compliant, as manufactured by Tnemec Company, Compton, California, or equal (no known equal).

2.3.11 Stainless Steel: ASTM Reference

2.3.12 Machine Bolts: Conform with ASTM A307.

2.3.13 Expansion Anchors: Not less than 3/8 inch diameter, threaded type for anchoring with the bolt head out, as indicated on drawings. Test by Owner's Testing Laboratory in accordance with criteria noted on drawings.

2.3.14 Hook Type Anchors: Not less than ½ inch diameter and length as required for minimum 7 inch embedment, with threaded nut and plain washer.

2.3.15 Welding Electrodes: Conform with A.W.S. Publication D1.1; use E-70XX series electrodes.

2.3.16 Stainless Steel Tube and Pipe: Conform with ASTM A554, ornamental grade, Type 302 or 304, Schedule 40, seamless with No. 4 finish.

2.3.17 Stainless Steel Shapes, Angles, Plates, Etc.: conform with ASTM A167, Type 302 or 304 with No. 4 OR rolled finish.

2.3.18 Metal Gratings, Trench Covers and Frames: Manufactured by Alhambra, Neenah or equal, cast iron heavy-duty traffic type, sizes and shapes as required.

2.3.19 Steel Pipe for Structural Uses: Conform with ASTM A53, Type S seamless, Grade B.

2.3.20 Cast Steel: Conform with ASTM A27.

2.3.21 Iron Castings: Conform with ASTM A48.

2.3.22 Malleable Iron Castings: Conform with ASTM A47.

2.3.23 Liquid Galvanizing Compound: "Drygalv", Fesco Inc., Los Angeles (213) 254-9131, "Galvicon", V. B. Anderson Co. (714) 547-6684; "Z.R.C. Cold Galvanizing Compound", Mechanical Distributors (213) 698-6655, or equal.

PART 3 – EXECUTION:

3.1 PREPARATION:

3.1.1 Obtain Architect approval prior to site cutting or making adjustments not scheduled.

3.1.2 Clean and strip site primed steel items to bare metal where site welding is scheduled.

3.1.3 Make provision for erection loads with temporary bracing. Keep work in alignment.

3.1.4 Supply items required to be cast into concrete or embedded in masonry with setting templates, to appropriate Sections.

3.2 WELDING:

3.2.1 Except for modifications indicated on drawings and specified herein, AISC Code of Standard Practice for Steel Buildings, as amended to date, governs materials, fabrication and erection of work under this Section.

3.2.2 Make welds in accordance with best standard practice. Perform welding on unexposed sides to prevent pitting, discoloring, weld-halo and other surface imperfections. Thoroughly clean surfaces to be welded. Welds must show a uniform section and reasonable smoothness without distortion. No exposed spot welding permitted. Dress and finish exposed surfaces of welded joints to produce invisible connections. Furnish welding alloys in the same color and character as the surfaces of the metals joined.

3.3 WORKMANSHIP, FABRICATION AND ERECTION:

3.3.1 Insofar as possible, fit and shop assemble work ready for erection. Accurately make jointing and intersections in true planes, and with adequate fastenings. Make exposed joints even and smooth. Grind exposed weld joints smooth and flush.

3.3.2 Provide holes of proper size and in correct location for attachment of work of other trades. Cut, tap, and drill as required. Finished items must be free from kinks, twists, burrs and open joints. Damaged or distorted materials are not acceptable.

3.3.3 Provide work to be built in concrete or masonry of proper form required for anchorage, or provide with concealed anchors.

3.3.4 Form work true to detail, with clean, straight and sharply defined profiles. Close fit exposed joints and make where least conspicuous.

3.3.5 Install supporting members, fastenings, frames, hangers, bracing, brackets, bolts, angles, and the like as required to set and connect items of miscellaneous metal to concrete, steel or wood framing.

3.3.6 Countersink holes for exposed screwheads. Provide necessary lugs, brackets, and clips so work can be assembled and installed in a neat and suitable manner.

3.3.7 Conceal fastenings where possible. Unless otherwise indicated provide flathead or countersunk oval bolts and screwheads as best suited for the purpose.

3.3.8 Weld in place plates for mounting item(s) of finish hardware.

3.3.9 Provide bolts, anchors, inserts, and other miscellaneous steel and iron fastenings in forms before concrete is poured; or as to be built into masonry, as indicated on drawings, details or schedules, or as necessary to complete the work. Examine and check the Architectural, Structural, Mechanical and Electrical Drawings for number, type and locations of each items.

3.4 MISCELLANEOUS ITEMS:

3.4.1 Furnish, fabricate, and install miscellaneous angles, channels, bent plate, clips, anchors, and other miscellaneous metal work required and as indicated on drawings. Form as detailed or if not detailed, as required for location and purposes served, and in accordance with the applicable provisions specified herein. Furnish and install miscellaneous metal items not specifically mentioned herein, or in other sections, but which are customarily considered as part of the work, the same as if fully specified herein and detailed on drawings.

3.4.2 Furnish and install light steel structural items not noted on Structural Drawings or called for under "Structural Steel" Section but which are shown on the other drawings.

3.4.3 Furnish and install sleeves through masonry or concrete walls and footings. Fabricate of standard weight steel sections of size sufficient to allow ¼ inch clearance between the sleeve and item to be inserted.

3.4.4 Furnish and install anchors, brackets, and plates of suitable steel where required in connection with steel, masonry, wood and concrete construction.

3.5 FINISH:

3.5.1 Except where indicated, or specified to be galvanized, clean miscellaneous steel and iron of any grease, rust, mill scale, or other foreign matter, and give one shop coat of the specified primer. Do not prime material to be embedded in concrete.

3.5.2 After welding is completed, repair damage to the galvanizing by applying a liquid galvanizing compound in accordance with manufacturer's instructions to provide a coating equal to original finish.

END OF SECTION

Section 06 10 00

CARPENTRY

PART 1 – GENERAL

1.01 DESCRIPTION

A. Work Included:

1. Provision of new shaped wood blocking beneath metal and EIFS coping caps.

B. Related Work:

1. Section 07 13 26 – Self-Adhered Membrane and Flashing.

2. Section 07 24 19 – Exterior Insulation and Finish System (EIFS).

3. Section 07 62 00 – Sheet Metal Flashing and Trim.

1.02 STANDARDS

A. The following standards are incorporated into these Specifications. Unless noted otherwise, comply with the current version of these standards.

1. American Society of Testing and Materials (ASTM): As referenced.

2. California State Building Code – Current Edition, with all applicable local amendments.

1.03 SUBMITTALS

A. Product Data: For each specified material.

B. Material Safety Data Sheets (MSDS): For each material where appropriate.

C. Manufacturer Certificates: Certifications by the producers that all materials supplied comply with the requirements of these Specifications and the appropriate standards and that the materials are suitable for the use specified herein.

D. Warranty: Provide sample of warranty, as specified herein, prior to beginning Work. Provide executed warranty upon project closeout.

1.04 WARRANTY

A. Installer's Warranty: Guarantee all work under this Section in a document stating that if, within two years after the Date of Substantial Completion of the Work, any of the work of this Section is found to be defective or not in accordance with the Contract Documents, the Contractor shall correct it promptly after receipt of a written notice from the Owner to do so, unless the Owner has previously given the Contractor a

written acceptance of such condition. Contractor shall bear all costs incurred by the Owner, including reasonable attorney's fees, to enforce the compliance with the obligations of this Guarantee. The obligation of this Guarantee shall run directly to the Owner and may be enforced by the Owner against the Contractor, shall survive the termination of the Contract, and shall not be limited by conditions other than this Contract.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Shaped wood blocking and nailers: Southern Yellow Pine; #2 grade or better, with specified preservative treatment.

B. Wood preservative treatment: Wood blocking shall be treated with waterborne preservatives in accordance with AWPA Standard U1 to the requirements of Use Category 3B (UC3B).

1. Chromated copper arsenate: Osmose K-33 complies with this Specification. All lumber shall be preservative treated under pressure in a closed retort. The treatment used shall be stamped on each piece by the processor. The minimum net retention of preservative shall be as called for by ASTM D1760 for ground contact (0.40 lb / cu ft of wood).

C. Fasteners: Stainless steel sheet metal screws, Phillips flat (countersunk) heads.

D. Separator Sheet: Multi-purpose building paper, single ply sheathing paper, 15 lb weight.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Examine all surfaces to receive blocking for roughness, corrosion, unsound structural substrates or other conditions that may impair the wood installation. Do not install new wood over damaged conditions. Notify the Owner and Engineer of any such conditions and do not commence work until all defects are remedied.

B. Verify site conditions and dimensions by field measurements in consideration of the special conditions associated with repairs to existing construction. Notify the Engineer immediately of any inconsistency between the conditions found and those shown on the Drawings. The Engineer will determine what modifications or additional repairs are necessary.

3.02 INSTALLATION

A. Install all components to provide a flush surface, without localized deviations from the intended plane. Solidly shim components as required during installation to provide a flush, planar surface. Provide a minimum of 1/2 in. / ft slope on horizontal surfaces, or as indicated on drawings. Cut and mill wood blocking to match adjoining roof and wall elements and to provide smooth transitions to adjacent surfaces. Install separator between lumber and light gauge metal.

B. Pre-drill holes in wood and substrates for anchors. Countersink fasteners into wood only to depth for heads to be flush.

C. Anchor blocking as required to parapets every 32 in. on-center, except anchor blocking at every 16 in. within 8 ft of corners unless otherwise indicated. Use a minimum of two fasteners per length of lumber and install two anchors at the ends of each length.

D. Verify the adequacy of attachment for existing wood blocking. Install additional anchors and replace existing blocking where deteriorated, as directed by the Engineer.

E. Do not use powder or air-actuated fasteners.

END OF SECTION

SECTION 07 13 26

SELF-ADHERED MEMBRANE AND FLASHING

PART 1 – GENERAL

1.01 DESCRIPTION

A. Work Included:

1. High temperature self-adhered membrane under exposed sheet metal copings and flashings.

2. Self-adhered flashing at transitions and terminations.

B. Related Work:

1. Section 06 10 00 – Carpentry.

2. Section 07 24 19 – Exterior Insulation and Finish System (EIFS).

3. Section 07 62 00 – Sheet Metal Flashing and Trim.

4. Section 07 90 00 – Sealants.

5. Section 09 29 00 – Exterior Sheathing.

1.02 STANDARDS

A. The following standards are incorporated into these Specifications. Unless noted otherwise, comply with the current version of these standards.

1. American Society of Testing and Materials (ASTM): As referenced.

2. California State Building Code – Current Edition, with all applicable local amendments.

1.03 PERFORMANCE REQUIREMENTS

A. Membrane system shall provide a watertight barrier to prevent passage of water into the building.

B. Membrane shall seal around penetrating fasteners and meet the strictest requirements of ASTM D1970.

1.04 SUBMITTALS

A. Product Data: For each specified material, submit manufacturer's literature and installation instructions for materials specified or proposed for use on the project, properly labeled and referenced to the appropriate Specification Section.

B. Material Safety Data Sheets (MSDS): For all materials, cleaners, and solvents used.

C. Shop Drawings: After field measurement and documentation of all existing conditions, prepare Shop Drawings, coordinated among all participatory trades. Establish and accommodate existing constraints and the variance in existing conditions. Show sequence of membrane and flashing installation to maintain correctly shingled laps, and show transitions, penetrations, and tie-in to dissimilar materials. Coordinate Shop Drawings with all relevant work of other trades specified in other Sections of these Specifications.

D. Manufacturer Certificates: Certifications by the producers that all materials supplied comply with the requirements of these Specifications and the appropriate standards and that the materials are suitable for the use specified herein.

E. Qualification Data: For manufacturer and installer.

F. Warranty: Provide sample of warrantees, as specified herein, prior to beginning Work. Provide executed warrantees upon project closeout.

1.05 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Membrane system shall be manufactured and marketed by a firm with a minimum of twenty years of experience in the production and sales of waterproofing membranes. Manufacturers proposed for use but not named in these Specifications shall submit evidence of ability to meet all requirements specified, and include a list of projects of similar design and complexity completed within the past five years.

B. Installer's Qualifications: Engage experienced personnel to perform work of this Section. The Contractor's Representative used for this portion of the Work shall have completed work similar in material, design, and extent to that indicated for this Project with a record of successful in-service performance, for a period of at least five years. Installer shall be certified, approved, licensed, or acceptable to manufacturer to apply products.

C. Single Source: Obtain each type of material comprising the membrane flashing system from a single manufacturer for the duration of the project.

D. Inspections: Perform inspections to ensure strict conformance to the Contract and approved Shop Drawings at all phases of construction. Inspect components for proper alignment and placement, attachment, workmanship, and damage. Inspect the Work

prior to covering any part of the Work described in this Section, or releasing for subsequent Work by other trades.

1.06 PRE-CONSTRUCTION CONFERENCE

A. Conduct a pre-construction conference held with Contractor, Installer, Owner, Architect / Engineer, Manufacturer, and all other involved trades to discuss and coordinate the Work covered under this Section.

1.07 PROJECT CONDITIONS

A. Work in conjunction with the other trades employed on the project by promptly completing the work of this Section as required to meet the project schedule so as not to impede other trades. Coordinate the work of this Section with other trades so that the intent of the Drawings and Specifications is carried out. Coordinate with other trades to maximize efficient use of scaffolding and to minimize disruption time to the building.

B. Environmental Limitations: Apply waterproofing within the range of ambient and substrate temperatures recommended by waterproofing manufacturer. Do not apply waterproofing to a damp or wet substrate.

1. Do not apply waterproofing in snow, rain, fog, or mist.

C. Maintain adequate ventilation during preparation and application of waterproofing materials.

1.08 PROTECTION, HANDLING, AND STORAGE

A. Keep materials dry while they are transported, stored, and delivered. Deliver materials in the manufacturer’s unbroken containers. Store materials on pallets and cover with fireproof canvas tarpaulins completely, top to bottom. Polyethylene covers are not acceptable. Store materials in a secure area designated by the Owner with adequate tie-downs against wind gusts.

B. Store elastomeric materials, adhesives, solvents, and sealants in their original containers and between 60°F and 80°F. If exposed to lower temperatures, restore to a uniform temperature of no less than 60°F prior to use.

C. Materials shall be marked with the date of manufacture and shelf life. Do not use products beyond the expiration of their shelf life. Store flammable materials in a cool, dry, and protected area away from sparks and open flames.

1.09 WARRANTY

A. Manufacturer’s Warranty: Provide five-year manufacturers' material warranties for the self-adhered membrane and flashing.

B. Installer's Warranty: Guarantee work under this Section in a document stating that if, within two years after the Date of Substantial Completion of the Work, any of the work of this Section is found to be defective or not in accordance with the Contract Documents, the Contractor shall correct it promptly after receipt of a written notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. State that the obligation of these Guarantees shall run directly to the Owner and may be enforced by the Owner against the Contractor, shall survive the termination of the Contract, and shall not be limited by conditions other than this Contract.

PART 2 – PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. General: Membrane shall be capable of performing as a continuous liquid-water drainage plane flashed to discharge to the exterior incidental condensation or water penetration. Membrane assemblies shall be capable of accommodating substrate movement and of sealing substrate expansion and control joints, construction material changes, and transitions at perimeter conditions without deterioration and air / water leakage exceeding specified limits. The membrane barrier shall have the following characteristics:

1. It must be continuous, with all joints made airtight.

2. It shall have an air permeability not to exceed 0.004 cfm/sq ft under a pressure differential of 0.3 in. water (1.57 psf) when tested in accordance with ASTM E2178.

3. It shall be capable of withstanding positive and negative combined design wind, fan, and stack pressures on the envelope without damage or displacement, and shall transfer the load to the structure. It shall not displace adjacent materials under full load.

4. It shall be durable or maintainable.

5. The membrane shall be joined in an airtight and flexible manner to the water resistant barrier material of adjacent systems, allowing for the relative movement of systems due to thermal and moisture variations and creep.

2.02 MANUFACTURERS

A. Manufacturers' products and specifications are generally referred to for identification; the products of other manufacturers meeting the specifications and standards of the specified systems may be submitted for review. The burden of proof for "equal" materials is on the Contractor. Check specified items upon Contract signing and initiate submittals in time to allow early ordering so that the work is not delayed. Use new materials unless designated otherwise.

B. Provide self-adhered membrane flashing and accessories from single source manufacturer.

2.03 MATERIALS

A. Provide complete membrane system and accessories by GCP Applied Technologies or approved equal, consisting of the following system components:

B. High-Temperature Self-Adhered Membrane

1. Grace Ultra, 0.030 in. thick, self-adhering butyl rubber-based membrane with integrally bonded high-density cross-laminated polyethylene laminate.

2. Equivalent material approved by Owner and Architect / Engineer.

C. Self-Adhered Membrane

1. Grace Perm-A-Barrier Wall Flashing, 0.040 in. thick, self-adhering asphalt rubber-based membrane with integrally bonded high-density cross-laminated polyethylene laminate.

2. Equivalent material approved by Owner and Architect / Engineer.

D. Primer

1. Grace Perm-A-Barrier WB Primer, water-based latex primer.

2. Equivalent material approved by Owner and Architect / Engineer.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Verify all site conditions and dimensions by field measurement in consideration of the special conditions associated with repairs to existing construction prior to development of submittals and to material fabrication, purchase, or delivery. Notify Owner and Architect/Engineer immediately of any inconsistency between field conditions and those shown on the Drawings.

B. Before starting Work in a given area, examine all surfaces to receive waterproofing membrane for oils, contaminants, unsound substrates, or other conditions that may impair the installation. Promptly report any such conditions to Owner and Architect / Engineer. Correct all defective conditions before commencing Work.

C. Round or chamfer all outside corners; ensure that corners are smooth and free of sharp protrusions.

3.02 GENERAL INSTALLATION

A. Follow all manufacturers' recommendations, unless more stringent requirements provided herein. Ensure that surfaces to receive primer and membrane are clean and dry. Prime substrates as required to fully adhere the self-adhered membrane / high-temperature self-adhered membrane.

B. Fully and completely adhere membrane to the primed substrate using a hard neoprene roller. Overlap sheets minimum 3 in. Wrinkles, open laps, blisters, perforations, or fishmouths in the membrane are not acceptable. Promptly repair defects in the membrane. Do not allow membrane installation defects to be concealed by Work completed in accordance with other Sections of these Specifications.

C. Configure membrane flashings to maintain laps to shed water; shingle flashings over onto metal flashings. Provide minimum 6 in. lap onto face of adjacent sheathing or waterproofing unless detailed otherwise.

3.03 PATCHING

A. Promptly repair all rips, tears, or holes in the membrane using precut sheets of membrane that extend 6 in. beyond the damaged area in all directions.

B. Extend patch sheets vertically and fit snugly against the lower edge of the membrane above to avoid creating backwater laps in the membrane.

C. Seal all leading edges of membrane and the perimeter of all patches with compatible weather barrier sealant.

END OF SECTION

SECTION 07 24 19 ***[Revised]***

EXTERIOR INSULATION AND FINISH SYSTEM (EIFS)

PART 1 – GENERAL

1.01 DESCRIPTION

A. Work Included:

1. The work includes labor, materials, equipment, and services required for completion of work under this Section, as shown on Drawings and as specified herein.

2. Provide blocking per Section 0610100 – Carpentry as necessary to support and anchor exterior wall components as shown on the Drawings.

3. Provide new sheet metal flashing transitions where shown on the Drawings and wherever necessary per Section 076200 – Sheet Metal Flashing and Trim to provide a smooth and continuous substrate for the water-resistive barrier (WRB).

4. Provide drainable EIFS cladding and attendant accessories, including high-impact reinforcing mesh, fluid-applied WRB, and EIFS. Colors of EIFS finish coats to match existing. Provide joints and reveals in EIFS to match existing conditions.

B. Related Work:

1. Section 06 10 00 – Carpentry.

2. Section 07 13 26 – Self-Adhered Membrane and Flashing.

3. Section 07 62 00 – Sheet Metal Flashing and Trim.

4. Section 07 90 00 – Sealants.

5. Section 09 29 00 – Exterior Sheathing.

6. Section 09 30 00 – Tiling.

1.02 STANDARDS

A. The following standards are incorporated into these Specifications. Unless noted otherwise, comply with the current version of these standards.

1. American Society of Testing and Materials (ASTM): As referenced.

2. International Code Council (ICC): As referenced.

3. California State Building Code – Current Edition, with all applicable local amendments.

1.03 SUBMITTALS

A. Product Data: For each specified material, submit manufacturer's literature and installation instructions for materials specified or proposed for use on the project, properly labeled and referenced to the appropriate Specification Section.

B. Material Safety Data Sheets (MSDS): For each material where appropriate.

C. Code Compliance Report: Manufacturer's code compliance report.

D. Shop Drawings: After field measurement and documentation of all existing conditions, prepare Shop Drawings, coordinated among all participatory trades. Establish and accommodate existing constraints and the variance in existing conditions.

1. Show locations and extent of WRB and EIFS and details of joints, penetrations, inside and outside corners, tie-ins with adjoining construction, and termination conditions.

2. Provide project specific details, keyed to plans, and elevations.

3. Shop Drawings shall be approved in writing by Manufacturer prior to submission.

E. Manufacturer Certificates: Certifications by the producers that all materials supplied comply with the requirements of these Specifications and the appropriate standards and that the materials are suitable for the use specified herein.

F. Samples for Initial Selection: Samples for each finish color and texture specified each properly labeled, minimum 12 in. by 12 in., three each.

G. Qualification data: For manufacturer and installer.

H. Maintenance Data: For EIFS to include in maintenance manuals.

I. Warranty: Provide sample warrantees, as specified herein, prior to beginning Work. Provide executed warrantees upon project closeout.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: EIFS and WRB shall be manufactured and marketed by a firm with 30 yrs experience in the production and sales of EIFS and WRB systems.

B. Installer Qualifications: The Installer must be engaged in the application of EIFS for a minimum of 5 yrs, be knowledgeable in the proper use and handling of the specified materials, employ skilled mechanics who are experienced and knowledgeable in EIFS application, and have successfully completed of minimum of ten projects of similar size and complexity to the specified project. Installer shall be certified, approved or acceptable to the manufacturer to install products.

C. Single Source: Obtain each type of material comprising the membrane flashing system from a single manufacturer for the duration of the project.

D. Project Foreman: The contractor shall designate a single individual as project foreman who shall be on site at times during construction and repairs installation.

E. Monitoring: Provide full-time monitoring of the progression of the work to ensure that items are constructed in accordance with the Drawings, Specifications, and referenced standards. Replace deficient or rejected work at no cost to the Owner and in a manner so as to prevent delay to the Project.

1.05 MOCKUPS

A. Construct in-situ full-scale mockup of typical EIFS-to-window wall assembly, comprising one typical bay, and test water infiltration in accordance with ASTM E331.

B. Mockups shall establish both the technical and aesthetic qualities for this Section. Use completed mockups to set a standard for acceptance for this work. Reconstruct the mockups as many times as necessary to meet the Architect / Engineer's approval without additional cost to the Owner.

1.06 PRECONSTRUCTION CONFERENCE

A. Conduct a preconstruction conference held with representatives of the Owner, the Contractor, the Architect / Engineer, the Installer and EIFS Foreman, Manufacturer, and other involved trades to discuss the work covered under this Section.

1.07 PROJECT CONDITIONS

A. Work in conjunction with the other trades employed on the project by promptly completing the work of this Section as required to meet the project schedule so as not to impede other trades. Coordinate the work of this Section with other trades so that the intent of the Drawings and Specifications is carried out. Coordinate with other trades to maximize efficient use of scaffolding and to minimize disruption time to the building.

B. Maintain ambient and surface temperatures above 40°F (4°C) during application and drying period, minimum 24 hrs after application of WRB and EIFS. Provide supplementary heat for installation in temperatures less than 40°F (4°C).

C. Maintain adequate ventilation during preparation and application of EIFS materials.

1.08 PROTECTION, HANDLING, AND STORAGE

A. Keep materials dry while they are transported, stored, and delivered. Deliver materials in the manufacturer's unbroken containers. Store materials on pallets and cover with fireproof canvas tarpaulins completely, top to bottom. Polyethylene covers are not acceptable. Store materials in a secure area designated by the Owner with adequate tie-downs against wind gusts.

B. Store elastomeric materials, adhesives, solvents, and sealants in their original containers and between 60°F and 80°F. If exposed to lower temperatures, restore to a uniform temperature of no less than 60°F prior to use.

C. Materials shall be marked with the date of manufacture and shelf life. Do not use products beyond the expiration of their shelf life. Store flammable materials in a cool, dry, and protected area away from sparks and open flames.

1.09 WARRANTY

A. Manufacturer's Warranty: Provide 12 yr manufacturer's standard warranty.

B. Installer's Warranty: Guarantee work under this Section in a document stating that if, within 2 yrs after the Date of Substantial Completion of the Work, any of the work of this Section is found to be defective or not in accordance with the Contract Documents, the Contractor shall correct it promptly after receipt of a written notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. State that the obligation of these Guarantees shall run directly to the Owner and may be enforced by the Owner against the Contractor, shall survive the termination of the Contract, and shall not be limited by conditions other than this Contract.

PART 2 – PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. System shall meet the performance and testing requirements of the following:

1. ASTM E 2568 New PB Exterior Insulation and Finish Systems (EIFS).

2. ASTM E 2570 Standard Test Methods for Evaluating Water-Resistive Barrier (WRB) Coatings Used Under Exterior Insulation and Finish Systems (EIFS) or EIFS with Drainage.

3. ASTM E 2273 Standard Test Method for Determining the Drainage Efficiency of Exterior Insulation and Finish Systems (EIFS) Clad Wall Assemblies.

4. ICC ES AC 235 Acceptance Criteria for EIFS Clad Drainage Wall Assemblies.

5. ACC ES AC 12 Acceptance Criteria for Foam Plastic Insulation.

B. System shall comply with NFPA 285 requirements.

2.02 MANUFACTURERS

A. Manufacturers' products and specifications are generally referred to for identification; the products of other manufacturers meeting the specifications and standards of the specified systems may be submitted for review. The burden of proof for "equal" materials is on the Contractor. Check specified items upon Contract signing and

initiate submittals in time to allow early ordering so that the work is not delayed. Use new materials unless designated otherwise.

B. Provide WRB, EIFS, and accessories from single source manufacturer.

2.03 MATERIALS *[Revised]*

A. EIFS: Provide complete drainable EIFS, StoTherm ci Classic by Sto Corp. or approved equal, consisting of the following system components:

1. Reinforcing Mesh:

   a. Standard Reinforcing Mesh: Sto Mesh by Sto Corp.

   b. High-Impact Reinforcing Mesh: Sto Armor Mat XX by Sto Corp.

   c. Detail Reinforcing Mesh: Sto Detail Mesh by Sto Corp.

2. Adhesive: Sto BTS Plus by Sto Corp.

3. Water-Resistive Barrier (WRB): Sto Gold Coat by Sto Corp.

4. Joint Compound (for WRB): Sto Gold Fill by Sto Corp.

5. Transition Compound (for WRB): StoGuard RapidFill by Sto Corp.

6. Transition Membrane (for WRB): StoGuard Transition Membrane by Sto Corp.

7. Insulation: Expanded Polystyrene (EPS) Insulation Board, nominal 1.0 lb/ft^3 (16 kg/m^3) in compliance with ASTM E2430, minimum 1 in. thick, maximum 4 in. thick.

8. Base Coat: Sto BTS Plus by Sto Corp.

9. Waterproof Intermediate Coat: Sto Flexyl by Sto Corp.

10. Primer: Sto Primer Sand by Sto Corp.

11. Finish Coat: Color to match existing or as approved by Owner.

   a. *Fin. 1 – Texture: StoLit by Sto Corp. as approved by Architect [Revised]*

   b. *Fin. 2 – Texture: StoLit by Sto Corp. as approved by Architect [Revised]*

   c. Fin. 3 – Precast concrete texture: Stolit Fine by Sto Corp.

12. Starter Track: Rigid polyvinyl chloride (PVC) track, Part No. STDE by Plastic Components, Inc., or equivalent.

   a. Fasteners for Starter Tracks:

(1) For Metal-Stud Walls: Type S-12 corrosion-resistant screws with minimum 3/8 in. (9 mm) penetration.

13. Drip Edge: One component polyvinyl chloride (PVC) drip edge with reinforcing mesh, Sto Mesh Corner Bead Standard by Sto Corp.

14. Corner Bead: One component polyvinyl chloride (PVC) corner reinforcement with reinforcing mesh, Sto Drip Edge Profile by Sto Corp.

15. Soffit Weep: Sto Drainage Strip by Sto Corp.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Verify site conditions and dimensions by field measurements in consideration of the special conditions associated with repairs to existing construction prior to development of Shop Drawings or submittals and to material purchase, fabrication, or delivery. Notify the Architect / Engineer immediately of any inconsistencies between field conditions and those shown on the Drawings.

B. Prior to commencing work, inspect substrates for contamination, cracks, damage, deterioration, and moisture.

C. Report deviations from the requirements of project specifications or other conditions that might adversely affect the WRB and EIFS installation to the General Contractor and Architect / Engineer. Do not start work until deviations are corrected.

3.02 SURFACE PREPARATION

A. Remove surface contaminants.

B. Protect rough openings, joints, and parapets.

C. Fill large gaps between sheathing or voids around pipe, conduit, scupper, and similar penetrations with spray foam and shave flush with surface.

D. Apply additional adhesive base coat as needed to float uneven surfaces flush.

E. Allow adhesive base coat to fully cure and dry prior to application of WRB materials.

3.03 WRB INSTALLATION

A. Apply WRB joint compound and transition compound by trowel over rough openings, sheathing joints, inside and outside corners, and tops of parapets and as shown on the Drawings. Immediately embed reinforcing mesh in the wet WRB joint compound and trowel smooth. Embed minimum 4 in. wide mesh at sheathing joints and minimum 9 in. (152 mm) wide mesh at rough openings, inside and outside corners, and tops of parapets. Apply WRB joint compound to fastener heads. Allow joint compound to dry as required by the manufacturer.

B. Mix and apply WRB coating by roller over sheathing surface, including the dry joint compound, to a uniform wet mil thickness of 10 mils in one coat. Use 3/4 in. (19 mm) nap roller for glass-mat-faced gypsum sheathing. Protect coating from weather until dry.

C. Coordinate installation of connecting air barrier components with other trades to provide a continuous airtight membrane.

D. Coordinate installation of flashing and other moisture protection components with other trades to achieve complete moisture protection directing water to the exterior, not into the wall assembly, and drained to the exterior.

3.04 EIFS INSTALLATION

A. EIFS workmanship is to comply with applicable recommendations provided by EIFS Industry Members Association (EIMA), to comply with details and recommendations provided by the manufacturer, and to be as prescribed in these Specifications. Do not proceed with EIFS installation until associated WRB and flashings are installed. Coordinate work to incorporate upturned legs and ends of flashing into EIFS work.

B. Provide minimum 3/4 in. (19 mm) wide expansion joints in the EIFS where they exist in the substrate or supporting construction, where the EIFS adjoins dissimilar construction or materials, and at changes in building height.

C. Provide minimum 1/2 in. (13 mm) wide perimeter sealant joints at penetrations through the EIFS (windows, doors, etc.).

D. Mix EIFS components according to manufacturer's recommended quantities, proportions, consistencies, ambient temperatures, and mixing times.

E. "Back wrap" insulation board edges with detail mesh at bases of walls and at EIFS terminations. Mesh must be wide enough to adhere a 4 in. strip of mesh to the back of insulation board, fully wrap board edge, and extend a minimum 4 in. onto the exterior face of the insulation board.

F. Rasp the interior lower face of insulation boards to provide a snug friction fit into the starter track.

G. Starter Track:

1. Strike a level line at the base of the wall to mark where the top of the starter track terminates.

2. Attach the starter track even with the line into the structure a maximum of 16 in. (406 mm) o.c. with No. 8 by 2 in. self-drilling self-tapping zinc-coated screws. Attach between studs into blocking as needed to secure the track flat against the wall surface.

3. Butt sections of starter track together. Miter cut outside corners and abut. Snip front flange of one inside corner piece (to allow EPS board to be seated inside of track) and abut.

4. Install the starter track at other EIFS terminations as shown on the Drawings.

5. Splice Strips for Starter Track and Flashing:

   a. Starter Track, Window / Door Head Flashing, and Side Wall Step Flashing: Install 2 in. (51 mm) wide diagonal splice strips of detail mesh at ends of head flashings. Install minimum 4 in. (100 mm) wide splice strips of detail mesh between back flange of starter track, head flashings, and roof / side wall step flashing. Center the mesh so that it spans evenly between the back flange of the starter track or flashing and the sheathing. Embed the mesh in the wet WRB joint compound and trowel smooth.

   b. Apply waterproof coating over the splice strip when the WRB joint compound is dry.

H. Apply adhesive to the back of the insulation board with a 1/2 in. x 1/2 in. x 2 in. U-notch stainless steel trowel. Apply uniform ribbons of adhesive parallel with the SHORT dimension of the board so that when boards are placed on the wall, the ribbons will be VERTICAL. Apply adhesive uniformly so that ribbons of adhesive do not converge. Prevent applied adhesive from blocking the weep hole in the starter track.

I. Immediately place insulation boards in a running bond pattern on the wall with the long dimension horizontal. Start by inserting the lower edge of the boards inside the starter track at the base of the wall until they contact the bottom of the track. Apply firm pressure over the entire surface of the boards to ensure uniform contact of adhesive. Bridge sheathing joints by a minimum of 6 in. (152 mm). Interlock inside and outside corners.

J. Butt board joints tightly together to eliminate any thermal breaks in the EIFS. Care must be taken to prevent any adhesive from getting between the joints of the boards.

K. Cut insulation board in an L-shaped pattern to fit around openings. Do not align board joints with corners of openings.

L. Remove individual boards periodically while the adhesive is still wet to check for satisfactory contact with the substrate and the back of the insulation board, and for spacing between ribbons of adhesive. An equal amount of adhesive must be on the substrate and the board when they are removed as an indication of adequate adhesion. Do not use nails, screws, or any other type of non-thermal mechanical fastener.

   1. After insulation boards are firmly adhered to the substrate, fill any open joints in the insulation board layer with slivers of insulation or spray foam. Use spray foam that is identified by the spray-foam manufacturer as suitable for this use.

   2. Rasp the insulation board surface to achieve a smooth, even surface and to remove any ultraviolet ray damage.

M. Trim, Reveals, and Projecting Aesthetic Features:

1. Attach features and trim where shown on Drawings with adhesive to the insulation board or sheathing surface. Slope the top surface of trim / features minimum 1:2 (27 deg) and the bottom of horizontal reveals minimum 1:2 (27 deg), or as shown on the Drawings.

2. Cut reveals / aesthetic grooves with a hot knife, router or groove tool where shown on the Drawings.

3. Offset reveals / aesthetic grooves minimum 3 in. (75 mm) from insulation board joints.

4. Do not locate reveals / aesthetic grooves at high-stress areas, such as corners of windows, doors, etc.

5. A minimum 3/4 in. (19 mm) thickness of insulation board must remain at the bottom of the reveals / aesthetic grooves.

N. Complete the backwrapping procedure by applying base coat to exposed edges of insulation board and approximately 4 in. (100 mm) onto the face of the insulation board. Pull mesh tight around the board and embed it in the base coat with a stainless steel trowel. Use a corner trowel for clean, straight lines. Smooth any wrinkles or gaps in the mesh.

O. Base / Intermediate Coat and Mesh Application:

1. Apply minimum 9x12 in. (225x300 mm) diagonal strips of detail mesh at flashing corners of windows, doors, and penetrations through the system. Embed the strips in wet base coat and trowel from the center to the edges of the mesh to avoid wrinkles.

2. Apply detail mesh at trim, reveals, and projecting architectural features. Embed the mesh in the wet base coat. Trowel from the base of reveals to the edges of the mesh.

3. For the first 6 ft above grade and at areas accessible to pedestrian traffic and other areas exposed to abnormal stress or impact, use high-impact mesh. Apply base coat over the insulation board with StoSilo spray equipment or a stainless steel trowel to a uniform thickness of approximately 1/8 in. (3 mm). Work horizontally or vertically in strips of 40 in. (1,016 mm) and immediately embed the mesh into the wet base coat by troweling from the center to the edge of the mesh. Butt the mesh at seams. Allow the base coat to dry.

4. Standard Mesh Application: Apply base coat over the insulation board, including areas with high-impact mesh, with StoSilo spray equipment or a stainless steel trowel to a uniform thickness of approximately 1/8 in. (3 mm). Work horizontally or vertically in strips of 40 in. (1,016 mm) and immediately embed the mesh into the wet base coat by troweling from the center to the edge of the mesh. Overlap mesh not less than 2-1/2 in. (64 mm) at mesh seams and at overlaps of detail mesh. Feather seams and edges. Double

wrap inside and outside corners with minimum 2-1/2 in. (64 mm) overlap in each direction. Avoid wrinkles in the mesh. Fully embed the mesh so that no mesh color shows through the base coat when it is dry. Reskim with additional base coat if mesh color is visible.

5. Sloped Surfaces: For trim, reveals, aesthetic bands, cornice profiles, sills, or other architectural features that project beyond the vertical wall plane more than 2 in. (51 mm), apply waterproof intermediate coat with a stainless steel trowel to the weather-exposed sloped surface and minimum 4 in. (100 mm) above and below it. Embed standard mesh or detail mesh in the waterproof base coat and overlap mesh seams a minimum of 2-1/2 in. (65 mm).

6. Allow base / intermediate coats to thoroughly dry before applying primer or finish.

P. Primer Application:

1. Apply primer evenly with brush, roller or proper spray equipment over the clean, dry base coat and allow to dry thoroughly before applying finish.

Q. Finish Coat Application:

1. Apply finish directly over the primed base / intermediate coats when dry. Apply finish by spraying or troweling with a stainless steel trowel, depending on the finish specified. Follow these general rules for application of finish:

a. Avoid application in direct sunlight.

b. Apply finish in a continuous application and work to an architectural break in the wall.

c. Weather conditions affect application and drying time. Hot or dry conditions limit working time and accelerate drying. Adjustments in the scheduling of work may be required to achieve desired results; cool or damp conditions extend working time and retard drying and may require added measures of protection against wind, dust, dirt, rain, and freezing. Adjust work schedule and provide protection.

d. Do not install separate batches of finish side by side.

e. Do not apply finish into or over sealant joints. Apply finish to outside face of wall only.

f. Do not apply finish over irregular or unprepared surfaces, or over surfaces not in compliance with the requirements of the Project Specifications.

3.05 PROTECTION

A. Provide protection of installed materials from water infiltration into or behind them.

B. Provide protection of installed materials from dust, dirt, precipitation, freezing, and continuous high humidity until they are fully dry.

3.06 CLEANING, REPAIR, AND MAINTENANCE

A. Clean and maintain the EIFS for a clean appearance and to prevent water entry into and behind the system. Repair cracks, impact damage, spalls, or delaminations promptly.

B. Maintain adjacent components of construction, such as sealants, windows, doors, and flashing, to prevent water entry into the wall assembly.

END OF SECTION

SECTION 07 62 00

SHEET METAL FLASHING AND TRIM

PART 1 – GENERAL

1.01 DESCRIPTION

A. Work Included

1. Sheathing transitions.
2. Copings and saddle flashings.
3. Head and sill flashings.
4. Miscellaneous building sheet metal flashing.
5. Associated sealant.

B. Related Work

1. Section 07 13 26 – Self-Adhered Membrane and Flashing.
2. Section 07 24 19 – Exterior Insulation and Finish System (EIFS).
3. Section 07 90 00 – Sealants.
4. Section 09 29 00 – Exterior Sheathing.

1.02 STANDARDS

A. The following standards are incorporated into these Specifications. Unless noted otherwise, comply with the current version of these standards.

1. American Society of Testing and Materials (ASTM): As referenced.
2. California State Building Code – Current Edition, with all applicable local amendments.

1.03 REFERENCES

A. ASTM A167 Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.

B. ASTM A653 Specification for Steel Sheet, Zinc-Coated, (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process.

C. ASTM B32 Specification for Solder Metal.

D. ASTM B209 Specification for Aluminum and Aluminum Alloy Sheet and Plate.

E. ASTM B749 Specification for Lead and Lead Alloy Strip, Sheet, and Plate.

F. ASTM D2092 Practices for Preparation of Zinc-Coated Galvanized Steel Surfaces for Paint.

G. ASTM D4586 Specification for Asphalt Roof Cement – Asbestos Free.

H. National Roofing Contractors Association (NRCA) Roofing Manual.

I. Sheet Metal and Air Conditioning Contractors National Association (SMACNA) Architect / Engineerural Sheet Metal Manual.

J. Society for Protective Coatings (SSPC).

K. FM Global (FMG) Loss Prevention Data Sheet 1-49.

1.04 PERFORMANCE REQUIREMENTS

A. General: Sheet metal flashing and trim assemblies as indicated shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.

B. Material Compatibility: Provide materials that are compatible with one another under conditions of service and application required, as demonstrated by testing and field experience.

C. Thermal Movements: Provide sheet metal flashing and trim that allow for thermal movements resulting from the following maximum ambient and surface temperatures by preventing buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects.

1. Temperature Change (Range): 120°F, ambient; 180°F material surfaces.

1.05 SUBMITTALS

A. Product Data: Submit for each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Shop Drawings: Clearly indicate materials, configurations and profiles, jointing methods and locations, fastening methods and locations, flashing terminations, and installation details. Show joint layout and elevations for joints exposed to view from grade outside of building with dimensions. Shop Drawings shall be the original work product of the contractor. Reproductions or markups of the Drawings not permitted. Include the following:

1. Identification of material, thickness, weight, and finish for each item and location in Project.

2. Details for forming sheet metal flashing and trim, including profiles, shapes, seams, and dimensions.

3. Details for joining, supporting, and securing sheet metal flashing and trim, including layout of fasteners, cleats, clips, and other attachments. Include pattern of seams.

4. Details of termination points and assemblies, including fixed points.

5. Details of expansion joints and expansion-joint covers, including showing direction of expansion and contraction.

6. Details of special conditions.

7. Details of connections to adjoining work, including transition saddles.

8. Detail formed flashing and trim at a scale of not less than 1-1/2 in. per 12 in.

9. Include three-dimensional axonometrics when depicting multiple-brake flashing and custom assemblies.

C. Samples for Initial Selection: For each type of flashing or trim indicated with factory-applied colored finishes.

1. Include similar samples of trim and accessories involving color selection.

D. Samples for Verification:

1. Sheet Metal Flashing: 12 in. long by actual width of unit, including finished seam and in required profile. Include fasteners, cleats, clips, closures, and other attachments.

2. Trim, Metal Closures, Expansion Joints, Joint Intersections, and Miscellaneous Fabrications: 12 in. long and in required profile. Include fasteners and other exposed accessories.

3. Accessories and Miscellaneous Materials: Full-size sample.

E. Manufacturer's Certification: Signed by the sheet metal fabricator certifying that the metal coating systems comply with the specified standards.

F. Qualification Data: For fabricator and installer.

G. Maintenance Data: For sheet metal flashing, trim, and accessories to include in maintenance manuals.

H. Warranty: Provide sample of warrantees, as specified herein, prior to beginning Work. Provide executed warrantees upon project closeout.

1.06 QUALITY ASSURANCE

A. General: Perform work in accordance with, but not limited to, Contract Documents approved Shop Drawings, Factory Mutual (FM) Global, NRCA Roofing and Waterproofing Manual, and manufacturer's instructions; the most stringent shall dictate.

B. Fabricator Qualifications: Shop with a minimum of 5 yrs of experience that employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.

C. Installer Qualifications: Firm with a minimum of 5 yrs of experience in installation of sheet metal flashing and trim similar to that required for this Project.

D. Provide effective full-time quality control over all fabrication and installation activities. Full responsibility for quality control shall remain with the Contractor.

E. Perform inspections to ensure strict conformance to the Contract and approved Shop Drawings at all phases of construction. Inspect components for proper alignment and placement, attachment, workmanship, and damage. Inspect the work prior to covering any part of the work of this Section or releasing for subsequent work by other trades.

F. Obtain each type of material through one source from a single manufacturer for the duration of the project.

1.07 PRECONSTRUCTION CONFERENCE

A. Conduct a preconstruction conference held with representatives of the Owner, the Contractor, the Architect / Engineer, the Installer, and other involved trades to discuss the work covered under this Section.

1.08 PROJECT CONDITIONS

A. Verify that field measurements are as indicated on shop drawings.

B. Coordinate Work of this Section with interfacing and adjoining Work for proper sequencing of each installation. Ensure best possible weather resistance, durability of Work, and protection of materials and finishes.

C. Do not apply sheet metal flashing during or with the threat of inclement weather. Do not work in rain, snow, winds gusting over 30 mph, or in the presence of any water.

D. When stopping work, temporarily protect incomplete areas from exposure to water until work resumes.

E. Coordinate Work of this Section with interfacing and adjoining Work for proper sequencing of each installation. Ensure best possible weather resistance, durability of Work, protection of materials and finishes, and comply with published, approved manufacturer’s recommendations.

F. Dispose of all debris in a legal manner, off the site. Safely conduct debris to trucks or approved containers on the ground.

G. If any unusual condition is discovered, stop work and promptly report this finding to the General Contractor and Engineer.

1.09 PROTECTION, HANDLING AND STORAGE

A. Deliver products to site, store, handle, and protect in accordance with manufacturers / fabricator's instructions and recommendations.

B. Deliver, store, and handle packaged materials in original containers with seals unbroken and labels intact until time of use.

C. Discharge materials carefully and store on clean concrete or raised platform in secure dry area. Do not dump on ground.

D. Stack preformed and prefinished material to prevent twisting, bending or abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.

E. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, discoloration, or other surface damage. Store sheet metal flashing and trim materials away from uncured concrete and masonry.

F. Do not store materials with strippable film in areas exposed to sunlight. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to the extent necessary for the period of sheet metal flashing and trim installation.

1.10 WARRANTY

A. Finish Warranty: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal flashing and trim that show evidence of deterioration of factory-applied finishes with the specified warranty period.

1. Exposed Flashing and Trim Finish: Deterioration includes, but is not limited to, the following:

a. Color fading more the five Hunter units when tested according to ASTM D 2244.

b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.

c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2. Finish Warranty Period: 20 yrs from date of Substantial Completion.

B. Installer's Warranty: Guarantee work under this Section in a document stating that if, within two years after the Date of Substantial Completion of the Work, any of the work of this Section is found to be defective or not in accordance with the Contract Documents, the Contractor shall correct it promptly after receipt of a written notice

from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. State that the obligation of these Guarantees shall run directly to the Owner and may be enforced by the Owner against the Contractor, shall survive the termination of the Contract, and shall not be limited by conditions other than this Contract.

PART 2 – PRODUCTS

2.01 SHEET MATERIALS

A. Galvanized Steel: ASTM A653; minimum G90 galvanized coating; minimum 24 ga or as indicated on Drawings.

B. Stainless Steel: ASTM A167, Type 302; 18-8 alloy; mill rolled #2D finish; minimum 24 ga or as indicated on Drawings.

2.02 ACCESSORIES

A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.

B. Receivers, cleats, and cover plates shall be the same temper, thickness, and color as the base metal, unless otherwise specified.

C. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.

1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.

   a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating with neoprene washers.

   b. Blind Fasteners: High-strength aluminum or stainless-steel flat head rivets suitable for metal being fastened. “Pop rivets” are prohibited.

2. Fasteners for Stainless Steel Sheet: Series 300 stainless steel.

3. Fasteners for Zinc-Coated (Galvanized) Steel Sheet: Hot-dip galvanized steel according to ASTM A 153/A 153M or ASTM F 2329 or Series 300 stainless steel.

4. Fasteners for Concrete: Masonry anchors in lengths sufficient to provide 1-1/4 in. embedment.

D. Solder:

1. For Stainless Steel: ASTM B 32, Grade Sn60, 60% tin and 40% lead, with acid flux of type recommended by stainless steel sheet manufacturer.

2. For Zinc-Coated (Galvanized) Steel: ASTM B 32, Grade Sn50, 50% tin and 50% lead, or Grade Sn60, 60% tin and 40% lead, with acid flux of type recommended by galvanized steel sheet manufacturer.

E. Elastomeric Sealant: ASTM C 920, elastomeric silicone polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight. Refer to Section 07 90 00 Sealants.

F. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant, polyisobutylene plasticized, heavy bodied for hooked-type expansion joints with limited movement. Refer to Section 07 90 00 Sealants.

G. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.

2.03 FABRICATION

A. Fabricate sheet metal flashings and related components in accordance with profiles and material thickness recommended by SMACNA except where more stringent requirements are indicated on Drawings or specified herein. Obtain field measurements for accurate fit before shop fabrication.

B. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 in. in 20 ft on slope and location lines as indicated and within 1/8 in. offset of adjoining faces and of alignment of matching profiles.

C. As far as practicable, form and fabricate sheet metal in shop. Where on-site fabrication is required, provide work equal to shop quality.

D. Fabricate sheet metal flashings and related components of materials indicated on Drawings unless specified otherwise.

E. Fabricate sheet metal flashings and related components in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.

F. Fabricate cleats and starter strips of same material as sheet, interlockable with sheet.

G. Fabricate cleats and attachment devices of sizes as recommended by SMACNA's "Architectural Sheet Metal Manual" and by FM Loss Prevention Data Sheet 1-49 for application, but not less than thickness of metal being secured or 22 ga, the more stringent shall dictate.

H. Form sections square, true and accurate in size, in maximum possible lengths and free of distortion or defects detrimental to appearance.

I. Form edge metal in either 8 or 10 ft sections; lengths shorter than 8 ft may be used at end of runs, with a minimum of 2 ft.

J. Fabricate inside and outside corners, intersections, and complex flashing conditions as a single unit in shop with properly folded, constructed, and mechanically fastened and soldered joints. After soldering, remove flux. Wipe and wash solder joints clean. Extend a minimum of 4 in. and not more than 8 in. in any direction.

K. Exposed edges of metal flashing shall be folded and hemmed. Hem exposed edges on underside 1/2 in.; miter and seam corners.

L. Mechanically fasten and solder (or weld) joints, splices, and transitions which are not designed for expansion.

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

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

3. Sealant filled joints may not be substituted for soldered joints: Use sealant where and as indicated on Drawings, and as specified herein.

M. Allow for expansion and contraction at joints. Where lapped or bayonet-type expansion provisions in the Work cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 in. deep, filled with butyl sealant concealed with joints.

N. Conceal fasteners and expansion provisions where possible on exposed-to-view sheet metal flashing and related components, unless otherwise indicated.

O. Provide saddle flashings for all flashings that intersect walls, columns, door jambs, etc. Saddle flashings shall be fabricated to weather board lap with adjacent flashings and/or weather resistant barriers. Saddle flashings indicated on drawings are minimums and do not indicate all intersection or variations but are intended to indicate intent. All saddle flashings to be mechanically fastened and soldered watertight with minimum 4 in. flanges.

P. Separate non-compatible metals and corrosive substrates by coating concealed surfaces at locations of contact with asphalt mastic or other permanent separation as recommended by manufacturer.

2.04 FINISH

A. Protect mechanical and painted finishes on exposed surfaced from damage by applying a strippable, temporary protective coating before shipping.

B. Variations in appearance of abutting or adjacent pieces are acceptable if they are within on-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

C. Clean, degrease, neutralize and phosphate treat galvanized sheet metal surfaces to receive paint finish in accordance with ASTM D2092, Method A.

D. Copings, Exposed Flashings, and Accessories (non-stainless steel):

1. Two-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70% PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacture's written instruction.

a. Color for Copings, EIFS Head Flashing and EIFS Edge Flashing: Closely match EIFS Fin. 1. Refer to Section 072419 – Exterior Insulation and Finish System (EIFS).

b. Color for Other Exposed Flashings: Closely match adjacent finishes including cement plaster and tile. For cement plaster finish, refer to Section 099663 – Silicone Elastomeric Coatings.

2. Concealed Finish: Apply pretreatment and manufacturer's standard white or light-colored acrylic or polyester backer finish consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil (0.013 mm).

PART 3 – EXECUTION

3.01 EXAMINATION

A. Verify site conditions and dimensions by field measurements in consideration of the special conditions associated with the alteration of existing construction and reconstruction prior to development of Shop Drawings or submittals and to material fabrication or delivery. Notify the Architect/Engineer immediately of any inconsistencies between field conditions and those shown on the Drawings.

B. Examine substrate conditions to determine acceptability for installation. Verify that substrates are acceptable for product installation in accordance with fabricator's instructions and recommendations.

C. Do not begin installation until unsatisfactory conditions have been corrected.

3.02 PROTECTION

A. Exercise care when working on and about roof surfaces to avoid damaging and puncturing membrane and flashings.

B. Place plywood panels on membrane roof surfaces adjacent to Work of this Section as temporary protection during course of cutting and fabrication.

C. Do not store sheet metal materials directly on roof surface. Place on pallets, plywood panels, or temporary sleepers.

D. Protect interior of building from water intrusion during operations performed under this Section.

3.03 PREPARATION

A. Allow wet substrates to dry thoroughly; clean debris from substrates.

B. Install starter, edge strips, and cleats before starting installation.

3.04 INSTALLATION

A. General: Install sheet metal flashing and trim to comply with SMACNA's "Architectural Sheet Metal Manual." Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement.

1. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.

2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.

3. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.

4. Torch cutting of sheet metal flashing and trim is not permitted.

5. Do not use graphite pencils to mark metal surfaces.

B. Shop-Fabricate: Shop-fabricate work to greatest extent possible. Do not leave any exposed sharp metal edges or burrs on finished metal work to help prevent injury to workers or occupants.

C. Install flashing to conform to details indicated on Drawings and included in NRCA and SMACNA manuals.

1. Install shop fabricated sheet metal work in accordance with final reviewed Shop Drawings.

2. Install manufactured assemblies in accordance with final reviewed Shop Drawings and manufacturer's installation instructions.

D. Install work watertight with components in true and accurate alignment with other components and related work, with joints accurately fitted, with corners reinforced and with surfaces free from dents.

E. Metal Protection: Protect against galvanic action by painting surfaces with bituminous coating.

F. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pretin edges of sheets to be soldered to a width of 1-1/2 in., except where pre-tinned surface would show in finished work.

1. Perform all soldering slowly with well-heated heavy (10 lbs/pair) irons with properly tinned clean blunt tips. Do not use torches for soldering.

2. Heat surfaces to receive solder and flow solder into joint. Fill joint completely. Close clinch lock seams gently with a block of wood and mallet, then flux and show at least one full inch of continuous and evenly flowed solder. Whenever possible, do all soldering in flat position. All sloped and vertical seams shall be laced and soldered a second time.

3. Wipe and wash clean soldered joints to remove all traces of acid from the flux immediately after the joints are made. Completely remove flux and splatter from exposed surfaces.

4. Grind smooth excess solder as required for a flat and uniform surface at all exposed locations. Prepare soldered joints prior to painting where indicated.

5. All soldered joints shall be mechanically fastened.

G. Fit flashings tight in place. Make corners square, faces true and straight in planes, and lines accurate to profiles.

H. Slope: Provide 1/2 in. / ft minimum slope on all horizontal surfaces to prevent ponding, unless otherwise indicated. Install flashings to ensure diversion of moisture to exterior.

I. Secure flashings in place using concealed fasteners. Use exposed fasteners only in locations indicated or authorized by Architect / Engineer.

J. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 ft with no joints allowed within 24 in. of corner or intersection. Lap and seal all joints designed for expansion.

K. Fastener Sizes: Use fasteners of sizes that will penetrate substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.

1. Do not penetrate flashing within 1-1/2 in. of bottom of flashing unless noted otherwise. Apply electrical isolation material when fastening to dissimilar metal.

L. Rivets: Mechanically fasten and solder all joints watertight, except at joints designed for expansion. After soldering, wash metal clean with neutralizing solution, rinse with water and wipe dry.

M. Provide minimum 8 in. wide backer plates at all laps in accordance with SMACNA, of same material and thickness as sheet, set in continuous butyl sealant.

N. Apply joint compound at slip joints or wherever metal-to-metal contact occurs and movement may occur.

O. Install sealant and sealant accessories in accordance with Section 079000 – Sealants.

P. Coordinate sheet metal installation with work of other trades to ensure proper sequencing.

3.05 ADJUSTING AND ERECTION TOLERANCES

A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 in. in 20 ft on slope and location lines as indicated and within 1/8 in. offset of adjoining faces and of alignment of matching profiles.

B. Replace damaged material with new undamaged material prior to final acceptance.

3.06 CLEANING

A. Clean sheet metal work; leave free from grease, finger marks, and stains.

B. Clean and neutralize flux materials. Clean off excess solder.

C. Clean off excess sealants.

D. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturers written installation instructions. On completion of installation, remove unused materials and clean finished surfaces. Maintain in a clean condition during construction.

E. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

F. Remove scrap and debris from surrounding areas and grounds.

3.07 PROTECTION

A. Protect installed Work of this Section from defacement or damage until final acceptance.

END OF SECTION

SECTION 07 90 00

SEALANTS

PART 1 – GENERAL

1.01 DESCRIPTION

A. Work Included

1. Sealant and backing materials within, around, under, and between perimeter and other elements of the cladding, windows, doors, and joints between dissimilar materials and changes in plane.

B. Related Work

1. Section 07 13 26 – Self-Adhered Membrane and Flashing.

2. Section 07 24 19 – Exterior Insulation and Finish System (EIFS).

3. Section 07 62 00 – Sheet Metal Flashing and Trim.

4. Section 09 29 00 – Exterior Sheathing.

5. Section 09 30 00 – Tiling.

1.02 DEFINITIONS

A. Use definitions in ASTM C 717.

B. Non-Bleeding: Not capable of exuding liquid chemical components of sealant.

C. Non-Staining: Not capable of discoloring joint substrate.

D. Sealant System: Sealant, sealant backing, and primer intended for use in particular condition.

1.03 STANDARDS

A. The following standards are incorporated into these Specifications. Unless noted otherwise, comply with the current version of these standards.

1. American Society of Testing and Materials (ASTM): As referenced.

2. California State Building Code – Current Edition, with all applicable local amendments.

1.04 SUBMITTALS

A. Product Data: For each sealant product and accessory, submit manufacturer's technical data, guarantees, application recommendations, and application instructions, including cleaning and priming instructions and sealant limitations for

each type of material required. Include manufacturers' published data, or letter of certification, or certified test laboratory report indicating that each material selected complies or is suitable for the temperatures, movements, and weather conditions that will be encountered during the sealants service life.

1. Written explanation to decipher code numbers used on material containers to record manufacturing dates.

2. Test reports for sealant adhesion testing of sealants to substrates to ensure that the sealant adequately bonds. Tests shall be conducted per ASTM C793 and C719.

3. Test reports shall be dated within 3 yrs of submittal date showing compliance with ASTM C920 and the standards C920 references.

B. Material Safety Data Sheets (MSDS): For materials to be used.

C. Shop Drawings: In schedule form including:

1. Joint location and designation.

2. Product manufacturer, name, formulation, and color.

3. Detail drawings for each installation condition, including joint conditions, sealant profiles, backings, substrates, and other application related information; manufacturer’s standard drawing details are acceptable if necessary information is conveyed.

D. Samples for Initial Selection: Submit manufacturer's standard bead samples consisting of strips of actual products to be exposed to view showing full range of colors available.

E. Samples for Verification: Samples for each kind and color of sealant to be exposed to view, in 1/2 in. wide joints formed between two 6 in. long strips of material matching appearance of exposed surfaces adjacent to sealants.

F. Product Test Reports: From an independent qualified testing agency, for compliance with contract requirements and testing in accordance with ASTM C719 and ASTM C902 using building substrates and production run materials for this project and application procedures in this specification.

G. Qualification Data: For manufacturer and installer.

H. Warranty: Provide sample of warrantees, as specified herein, prior to beginning Work. Provide executed warrantees upon project closeout.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Manufacturer shall demonstrate qualifications to supply products of this section by certifying the following:

1. Manufacturer must show evidence that the product has been manufactured by the same source for 15 yrs and successfully applied on a yearly basis for a minimum of fifteen years on projects of similar scope and complexity.

2. Manufacturer must not issue warranties for terms longer than they have been manufacturing their product.

3. Manufacturer shall have available an in-house technical staff to assist the Applicator in application of the products and final inspection of the system specified herein.

B. Installer Qualifications: Engage an experienced installer who has a minimum of 5 yrs of documented experience in the successfully completion of work of similar scope, size and complexity to the Work described herein. Firm shall staff the Work of this Section with only qualified personnel experienced in the application of this material. Installer shall be certified, approved, or acceptable to manufacturer to install products.

C. Arrange with the materials manufacturer or distributor to provide a competent field representative at the work site prior to application to instruct the work crews in the proper application procedures. The representative shall remain at the job site after Work commences and continue to instruct until the representative, the Applicator, and the Owner are satisfied that the crew has mastered application successfully. Representative shall return following sealant cure and perform adhesion tests following cure. The manufacturer's field representative shall be fully qualified to perform the Work and is subject to the approval of the Owner. The Applicator is completely responsible for the expense of the services of the required manufacturer's field representative, and the Contract price shall include full compensation for costs in connection therewith.

D. Perform a field adhesion test at a rate of one test for every 200 linear feet of sealant as specified in Part 3 of this Section. If sealant fails adhesively, perform additional tests and corrective action, including re-application of sealant, as required by the Architect.

E. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.

F. Preconstruction Field Adhesion Testing:

1. Construct on site at least twenty-one days prior to pre-installation conference.

2. Construct sealant joint mockup 5 ft long for elastomeric joint sealants specified in this Section.

3. Position at location indicated by Architect / Engineer.

4. Perform "field hand-pull adhesion test" described under Field Adhesion Test, one per each different substrate on the building exterior envelope. Pull Test to be performed twenty-one days after application.

1.06 PRECONSTRUCTION CONFERENCE

A. Conduct a preconstruction conference held with representatives of the Owner, the Contractor, the Architect / Engineer, the Installer, Manufacturer, and other involved trades to discuss the work covered under this Section.

1.07 PROJECT CONDITIONS

A. Work in conjunction with the other trades employed on the project by promptly completing the work of this Section as required to meet the project schedule so as not to impede other trades. Coordinate the work of this Section with other trades so that the intent of the Drawings and Specifications is carried out. Coordinate with other trades to maximize efficient use of scaffolding and to minimize disruption time to the building.

B. Proceed with Work only when the forecasted weather conditions will permit Work to be applied in compliance with manufacturer's recommendations and when substrate is completely dry and free of debris, oils, solvents, or other materials that would adversely affect application of materials.

C. Ensure substrates are dry and free of contaminants.

D. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by manufacturer or are below 40˚F or over 95˚F.

2. When joint substrates are damp, or humidity conditions are outside limits permitted by sealant manufacturer.

3. If inclement weather is forecast within 36 hrs.

E. Joint-Width Conditions: Do not proceed with installation of joint sealants where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.

F. Joint-Substrate Conditions: Do not proceed with installation of joint sealants until contaminants capable of interfering with adhesion are removed from joint substrates.

1.08 PROTECTION, HANDLING AND STORAGE

A. All materials are to be of recent manufacture and delivered to the job site in original unopened containers with the manufacturer's name, number, batch identification and date of production.

B. Do not use materials whose shelf life has expired.

C. Store at 80°F or less in a cool, dry area. Handle materials to prevent their deterioration or damage due to moisture, temperature changes, contaminates, or other causes. Promptly remove from site materials rejected by the Owner's Representative.

1.09 WARRANTY

A. Manufacturer’s Warranty for Silicone Sealants: Furnish warranty for a period of 20 yrs from date of substantial completion agreeing to furnish joint sealants to repair or replace those that do not comply with performance and other requirements specified, signed by an authorized representative using the manufacturer’s standard form.

B. Manufacturer’s Warranty for Other Sealants: Furnish warranty for a period of 5 yrs from date of substantial completion agreeing to furnish joint sealants to repair or replace those that do not comply with performance and other requirements specified, signed by an authorized representative using the manufacturer’s standard form.

C. Installer’s Guarantee: Guarantee work under this Section in a document stating that if, within 2 yrs after the Date of Substantial Completion of the Work, any of the work of this Section is found to be defective or not in accordance with the Contract Documents, the Contractor shall correct it promptly after receipt of a written notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. State that the obligation of these Guarantees shall run directly to the Owner and may be enforced by the Owner against the Contractor, shall survive the termination of the Contract, and shall not be limited by conditions other than this Contract.

PART 2 – PRODUCTS

2.01 MATERIALS

A. General: Manufacturer's products and specifications are generally referred to for identification; except as noted, products of other manufacturers meeting the requirements itemized below may be submitted for approval. Unless approved by the Architect / Engineer, obtain materials from the same manufacturer whenever possible.

1. Check for availability of specified items early and report long lead times that may impact the intended schedule to the Owner promptly to prevent delays in the work.

B. Sealant

1. Silicone General Purpose (S-GP): Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant, ASTM C 920, Type S, Grade NS, Class 50, for Use NT, G, A, and O; SWRI validation.

a. Dow Corning 795. Color as selected by the Architect / Engineer from manufacturer's standard colors.

2. Silicone Weather Barrier (S-WB): Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant, ASTM C 920, Type S, Grade NS, Class 25, for Use NT; SWRI validation.

a. Dow Corning 758. Color, white.

3. Butyl Sealant (B): Butyl rubber-based sealant, ASTM C920, Type S, Grade NS, Class 7.5

   a. Tremco Butyl Sealant. Color, black.

   b. Approved equal.

2.02 PREPARATORY MATERIALS

A. Joint Cleaner: As recommended by sealant manufacturer.

B. Primer: Non staining types recommended by sealant manufacturer to suit applications.

C. Joint Filler: ASTM D1056, round, closed-cell, non-staining, non-gassing polyethylene foam rod, oversized 30% of the joint width. Surface skin of rod shall be continuous and unbroken and of sufficient thickness to preclude out-gassing and formation of voids in the overlying sealant.

D. Bond Breaker Tape: Pressure-sensitive tape to which sealant does not bond, recommended by sealant manufacturer to suit applications, width as required.

E. Weep Baffles: PVC coated open-cell reticulated foam, forty pores per inch (ppi).

F. Masking Tape: Non-staining, non-absorbent material compatible with sealants and surfaces adjacent to joints.

G. Wherever sealants are not exposed to view, provide manufacturer's standard color which has the best overall performance characteristics for the application indicated.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Examine substrates, areas, and conditions, with Applicator present, to verify actual locations, dimensions, and other conditions affecting performance of work.

1. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.

2. Verify site conditions and dimensions by field measurement. Notify the Architect immediately of inconsistency between the conditions found and those shown in the Drawings

3. Proceed with application only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. General: Prepare surfaces according to Manufacturer recommendations, except as modified herein.

B. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all existing sealant from joints scheduled to be completely resealed.

2. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints, old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.

3. Clean concrete substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Use non-metallic brushes or grinding blade.

4. Clean nonporous surfaces, such as metal or glass, with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.

C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.03 SEALANT APPLICATION

A. General

1. Perform preparation, application, and testing in accordance with the referenced standards, manufacturer's published product data, and approved written recommendations by the sealant manufacturer's field representative, except as otherwise stated in this Section.

a. Clean and prepare surfaces to receive sealant materials.

b. Use materials best suited to application as recommended by sealant manufacturers. Provide sealants essential in maintaining continued integrity of a watertight, weathertight barrier.

c. Apply sealant within recommended temperature ranges. Consult manufacturer when sealant cannot be applied within recommended temperature ranges.

2. Form joints as detailed on Drawings, concave, unless shown otherwise, free of air pockets and gaps, embedded matter, ridges and sags. Dry-tool joints to required configuration within 10 min. of sealant application.

B. Joint Preparation

1. Examine joint dimensions and size materials to achieve required width-to-depth ratios.

2. Clean and prepare joints in accordance with manufacturer's written recommendations. Use two-cloth method to clean joints. Do not leave cleaner residue on surfaces to receive sealant.

3. Ensure that joint forming materials are compatible with sealants.

4. Use joint filler to achieve required joint depths, to allow sealants to perform properly. Use bond breakers where required.

C. Sealant Joint Construction

1. Sealant joints shall contain bond breaker tape, backer rod, or other approved means to allow the sealant to stretch freely while the joint moves, unless specifically detailed. Avoid three-sided adhesion in joints. Follow manufacturers' current written guidelines for application unless specifically noted in this Specification.

2. At fillet (triangular) joints, extend the sealant at least 3/8 in. onto the substrate beyond and parallel to the bond breaker tape or backer rod and at least 5/8 in. onto the substrate perpendicular to the tape or rod, unless detailed otherwise. The minimum thickness between the edge of the tape or rod and the surface of the sealant joint shall be 1/4 in., maximum 3/8 in.

3. The centerline depth of butt joints shall be one-half of joint width, with minimum depth of 1/4 in. and maximum depth of 1/2 in.

4. Inspect joints for proper width and immediately report noncompliance with the Specifications in writing to the Architect prior to application of sealant so adjustments can be made to provide proper joint sizes before joint is sealed.

5. Dual-stage joints shall have a minimum 1/4 in. deep drainage cavity between the exterior face of the secondary joint and the back-up material of the primary joint.

6. Keep sealants 1/2 in. minimum from asphalt based membranes unless otherwise noted.

D. Apply Primer

1. Apply primer to substrates before backer rod installation. Apply primer to clean, dry substrates at ambient temperatures above 50°F.

2. Pour primer into a clean container for use. Do not pour more than a 10 min. supply into container to prevent deterioration. Replace cap on primer can immediately after use. Remove from the site primer that is discolored, contains a precipitate, or has thickened.

3. Apply primer with a clean brush. Do not apply primer to exposed surfaces beyond sealant. Mask surfaces before priming, except where surface

irregularities will allow the primer to wick beneath the masking tape. Use only one coat of primer. Do not apply primer in a thick layer.

4. Allow primer to dry. Do not allow primer to become wet before sealant application.

E. Install Back-Up Material

1. Do not install back-up material until primers have completely dried.

2. Unless noted otherwise, install clean, dry joint filler/back-up rod or tape into joint openings against dry substrates. Remove wet materials from the job site. Replace backer rod not sealed over by the end of each day and solvent-clean surfaces again.

3. Place the backer rod or bond breaker so the sealant shape will meet the joint shape requirements of this Section and as shown on the Drawings.

4. Place the rod so the sealant depth measured at the center of the joint after tooling is one-half of the sealant joint width.

   a. Minimum depth: 1/4 in.

   b. Maximum depth: 1/2 in.

5. Change rod sizes as frequently as required by the variation in the joint width. Do not twist rods together. Butt ends of rods tightly. Provide a full range of rod sizes at the site of sealant work. Rods shall be at least 2 ft long.

6. Do not touch with fingers or otherwise contaminate the substrate surfaces while inserting the backer rod or bond breaker tape.

7. Do not rupture the skin of the closed-cell backer rod during installation. Remove rod containing punctures and solvent-clean the surfaces again.

8. Use bond breaker tape where joint depth or geometry does not permit installation of backer rod.

9. Install only as much backer rod as can be sealed in the same day.

F. Apply Sealant

1. Inspect each cartridge or container of sealant before use and verify that the production date is within six months of the date of application. Remove sealant more than six months old from the site.

2. Mask exposed surfaces, not masked for priming, along joint before applying sealant.

3. Recheck correct backer rod and bond breaker tape positioning before applying sealant.

4. At weep areas of sealant where indicated on the Drawings (e.g., window heads), install foam weep baffle as shown on the Drawings. Recheck correct weep baffle positioning before applying sealant. Adhere the weep baffle in place with sealant at its ends and top surface; however, do not apply sealant to the weep surface (front face, rear face) of the weep baffle.

5. Keep sealants 1/2 in. minimum from asphalt-based membranes unless otherwise noted.

6. Apply sealant only to clean, dry, primed surfaces at ambient temperatures above 45°F. Seal joints within 10 hrs of primer application.

7. Fill joints solidly and continuously with sealant, neatly applied with a standard caulking gun in a continuous motion, using a slight pressure. "Push" the sealant bead ahead of the nozzle; do not "drag" the nozzle.

8. At fillet (triangular) joints, extend the sealant at least 3/8 in. onto the substrate beyond and parallel to the bond breaker tape or backer rod and at least 5/8 in. onto the substrate perpendicular to the tape or rod, unless detailed otherwise. The minimum thickness between the edge of the tape or rod and the surface of the sealant joint shall be 1/4 in.

9. At butt joints, the centerline depth of joint shall be one-half of joint width, with minimum depth of 1/4 in. and maximum depth of 1/2 in.

10. Within 5 minutes of sealant application and before skin develops on sealant, dry tool the joint surface with a concave tool to ensure intimate contact with substrate and to eliminate air bubbles. Do not use liquid for tooling. Provide a smooth, uniform, finished surface. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.

11. Remove masking tape within 10 min. of tooling liquid sealant. Avoid contaminating adjacent surfaces with excess sealant. Remove traces of smears and droppings on metal or glass surfaces promptly, using a solvent recommended by the sealant manufacturer and that will not damage or discolor the building surfaces. Remove smears and droppings on porous surfaces by mechanical means after the initial cure of the sealant.

12. Coordinate work to prevent contamination of fresh sealant by dust or other debris.

G. Field Adhesion Tests

1. Perform adhesion pull tests after sealant is fully cured.

2. At field samples:

   a. Before sealant application is commenced, test materials for indications of staining and poor adhesion to substrate.

   b. Perform after sealants have been applied for a minimum of twenty-one days and are fully cured.

c. Perform under observation of Manufacturer's technical representative.

d. Remove sealants that fail adhesively during testing. Retest failed applications until test results prove sealants comply with indicated requirements. Failed adhesion locations will require additional testing to determine the extent of repair.

3. Subsequent to commencement of sealant application:

a. Perform under observation of manufacturer's technical representative.

b. Perform two tests for the first day of joints for each type of sealant and joint substrate. Perform one test for each week of sealant application thereafter.

c. Schedule tests at evenly spaced intervals during sealant application at discretion of the sealant manufacturer.

4. Remove sealants that fail adhesively during testing. Retest failed applications until test results prove sealants comply with indicated requirements. Failed adhesion locations will require additional testing to determine the extent of repair. Procedure:

a. Make knife cut through sealant from side to side of joint.

b. At joint's sides, make two cuts approximately 2 in. long meeting cut made across joint width.

c. Place a mark on cut portion of sealant 1 in. from cut across joint width.

d. Use fingers to grasp 2 in. piece of sealant firmly between mark and cut across joint width.

e. Pull cut portion outward at an angle of 90 deg from sealant face.

f. Use a ruler to measure distance that sealant is pulled.

g. Pull uncut sealant out of joint to distance recommended by manufacturer for testing adhesive capability, but not less than a distance equal to maximum movement capability in extension.

h. Hold extended sealant for a minimum of 10 sec.

i. If adhesion is proper, sealant shall tear cohesively in itself or be difficult to adhesively remove from joint substrate.

5. Summarize each test result in test report. Submit the report to the Architect promptly Indicate in the report:

a. Sealants tested.

b. Joint substrates.

c. Cohesive failures.

d. Adhesive failures.

e. Pull distance used.

f. Actions to correct failures and non-complying conditions.

6. In absence of non-complying conditions, sealants that do not indicate adhesive failure from testing will be considered satisfactory.

7. Replace sealant removed from test locations by applying sealant in accordance with manufacturer's requirements for applying sealant to previously sealed joints.

3.04 SCHEDULE

A. Sealant Schedule: Apply sealants in locations defined below and as indicated on the Drawings.

1. Exposed: S-GP.

2. Concealed, in contact with self-adhered membrane flashing: S-WB.

3. Concealed, lap joints in sheet metal: B.

3.05 PROTECTION AND CLEAN UP

A. Avoid contaminating adjacent surfaces with sealant. Remove smears and droppings on adjacent surfaces.

B. Remove traces of smears or droppings on metal or glass surfaces promptly using a solvent recommended by the manufacturer that will not damage or discolor the building surfaces.

C. Repair or replace defaced or disfigured finishes caused by Work of this Section.

END OF SECTION

SECTION 09 29 00

EXTERIOR SHEATHING

PART 1 – GENERAL

1.01 DESCRIPTION

A. Work Included

1. New exterior sheathing materials where the existing sheathing is removed.

B. Related Work

1. Section 07 13 26 – Self-Adhered Membrane and Flashing.
2. Section 07 24 19 – Exterior Insulation and Finish System (EIFS).
3. Section 07 62 00 – Sheet Metal Flashing and Trim.

1.02 STANDARDS

A. The following standards are incorporated into these Specifications. Unless noted otherwise, comply with the current version of these standards.

1. American Society of Testing and Materials (ASTM): As referenced.
2. California State Building Code – Current Edition, with all applicable local amendments.
3. Gypsum Association
   a. GA-600 Fire Resistance Design Manual.
   b. GA-253 Application of Gypsum Sheathing.
   c. GA-254 Fire Resistant Gypsum Sheathing.

1.03 SUBMITTALS

A. Product Data: For each specified material, submit manufacturer's literature and installation instructions for materials specified or proposed for use on the project, properly labeled and referenced to the appropriate Specification Section.

B. Material Safety Data Sheets (MSDS): For all materials, cleaners, and solvents used.

C. Manufacturer Certificates: Certifications by the producers that all materials supplied comply with the requirements of these Specifications and the appropriate standards and that the materials are suitable for the use specified herein.

D. Qualification Data: For Manufacturer and Installer.

E. Warranty: Provide sample of warrantees, as specified herein, prior to beginning Work. Provide executed warrantees upon project closeout.

1.04 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Sheathing system shall be manufactured and marketed by a firm with a minimum of twenty years of experience in the production and sales of sheathing membranes. Manufacturers proposed for use but not named in these Specifications shall submit evidence of ability to meet all requirements specified, and include a list of projects of similar design and complexity completed within the past five years.

B. Installer Qualifications: Engage an experienced installer who has a minimum of 5 yrs experience in the successful completion of work of similar scope, size, and complexity to the Work described herein. Firm shall staff the Work of this Section with only qualified personnel experienced in the application of this material.

C. Single Source: Obtain each type of material comprising the sheathing system from a single manufacturer for the duration of the project.

D. Inspections: Perform inspections to ensure strict conformance to the Contract Documents at all phases of construction. Inspect components for proper alignment and placement, attachment, workmanship, and damage. Inspect the Work prior to covering any part of the Work described in this Section, or releasing for subsequent Work by other trades.

1.05 PRECONSTRUCTION CONFERENCE

A. Conduct a preconstruction conference held with representatives of the Owner, the Contractor, the Architect / Engineer, the Installer, and other involved trades to discuss the work covered under this Section.

1.06 PROJECT CONDITIONS

A. Work in conjunction with the other trades employed on the project by promptly completing the work of this Section as required to meet the project schedule so as not to impede other trades. Coordinate the work of this Section with other trades so that the intent of the Drawings and Specifications is carried out. Coordinate with other trades to maximize efficient use of scaffolding and to minimize disruption time to the building.

B. Exposure Limitation: Gypsum sheathing shall not be exposed to weather for more than 180 days.

1.07 PROTECTION, HANDLING, AND STORAGE

A. Keep materials dry while they are transported, stored, and delivered. Deliver materials in the manufacturer's unbroken containers. Store materials on pallets and cover with

fireproof canvas tarpaulins completely, top to bottom. Polyethylene covers are not acceptable. Store materials in a secure area designated by the Owner with adequate tie-downs against wind gusts.

1.08 WARRANTY

A. Manufacturer's Warranty: Furnish warranty for a period of 5 yrs from the date of substantial completions agreeing to repair or replace defective materials, signed by an authorized representative of manufacturer using standard form.

B. Installer's Warranty: Guarantee work under this Section in a document stating that if, within two years after the Date of Substantial Completion of the Work, any of the work of this Section is found to be defective or not in accordance with the Contract Documents, the Contractor shall correct it promptly after receipt of a written notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. State that the obligation of these Guarantees shall run directly to the Owner and may be enforced by the Owner against the Contractor, shall survive the termination of the Contract, and shall not be limited by conditions other than this Contract.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Gypsum Sheathing: Glass-mat gypsum board; ASTM C 1177, Type X; 5/8 in. and 1/2 in. to match thickness of the existing sheathing.

1. DensGlass Gold, Type X, by Georgia-Pacific.

B. Fasteners: Bugle head, self-drilling, self-tapping screws with Phillips-head recess of size, holding power, and other properties recommended by manufacturer; minimum 1 in. long, with corrosion-protective coating have a salt-spray resistance of more than 800 hours according to ASTM B 117.

1. Metal Framing Members less than 0.030 in. Thick: ASTM C 1002, Type S.

2. Metal Framing Members from 0.033 in. to 0.112 in. Thick: ASTM C 954, Type S-12.

C. Accessories: As recommended by the manufacturer.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Verify all site conditions prior to installing the work of this Section. Notify the Engineer immediately of any inconsistency between conditions found and those shown on the Contract Drawings. Do not apply any materials unless the substrates are smooth,

clean, and dry. If any unusual condition is discovered, stop work and promptly report this finding to the Engineer. Do not commence work until all defects are remedied.

B. Examine all framing and substrates to receive work of this Section. Verify that the face of framing members to receive work of this Section vary no more than 1/4 in. from the plane the adjacent member faces, and that framing spacing does not exceed every 16 in. o.c., unless otherwise indicated.

3.02 SHEATHING INSTALLATION AND WORKMANSHIP

A. Install sheathing in accordance with the Manufacturers' published instructions and product literature unless otherwise noted herein.

B. Use maximum sizes possible to minimize joints. Install continuously stud-to-stud, spanning a minimum of two openings. Make all vertical joints at studs. Cut sheathing to fit accurately into opening. Gaps between panels shall not exceed 1/4 in. Do not force panels against each other.

C. Fasten to studs at 8 in. o.c. Locate fasteners between 3/8 in. and 5/8 in. from ends and edges of sheathing boards, and no more than 5/8 in. from corners.

D. Install fastener heads flush with the surface; do not countersink and do not overdrive fasteners. Install fasteners per the manufacturer's installation guidelines using a screw gun with a torque limiting drive. Board shall have firm, continuous contact against framing.

3.03 PROTECTION

A. Protect gypsum sheathing from damage during installation and remainder of construction period according to manufacturer's instructions. Remove and replace gypsum sheathing exposed to sunlight for more than the number of days allowed by the manufacturer.

END OF SECTION

CERAMIC TILE
SECTION 093000

PART 1 - GENERAL

All applicable portions of the Contract which apply to work of this section as if printed herein.

1.1 SECTION INCLUDES: Description of requirements for material, fabrications and installation of all ceramic and quarry tile, etc. as shown on the drawings. Work shall include primarily but is not limited to:

1.1.1 Ceramic Tile.

1.1.2 Grout, mortar bed, and setting materials.

1.1.3 Waterproof underlayment and cleavage membranes

1.1.4 Sealers

1.2 RELATED WORK SECTIONS:

1.2.1 Section 079000 – Sealants and Caulking.

1.2.2 Section 092113 – Lath and Plaster.

1.2.3 Section 092116 – Gypsum Board.

1.3 REFERENCES AND STANDARDS:

1.3.1 ANSI A108.1 B – Installation of Ceramic Tile on a Cured Portland Cement Mortar Bed with Dry-Set or Latex-Portland Cement Mortar.

1.3.2 ANSI A108.5 B – Ceramic Tile installed with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar.

1.3.3 ANSI A108.10 – Installation of Grout in Tilework

1.3.4 ANSI A118.3 – Chemical-Resistant Water Cleanable Tile-Setting and Grouting Epoxy and Water Cleanable Tile-Setting Epoxy Adhesive.

1.3.5 ANSI A118.4 – Latex-Portland Cement Mortar.

1.3.6 ANSI A118.6 – Ceramic Tile Grouts.

1.3.7 ANSI A136.1 Organic Adhesives for Installation of Ceramic Tile

1.3.8 ANSI A137.1 Specifications for Ceramic Tile.

1.3.9 ANSI A118.1 Dry-Set Portland Cement Mortar

1.3.10 ASTM C 1028 – Test Method for Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method.

1.3.11 TCA (Tile Council of America) – Handbook for Ceramic Tile Installation.

1.4 SUBMITTALS:

1.4.1 Refer to Section 013300

1.4.2 Samples

1.4.3 Materials List/Details: Accompanying samples, submit complete list of all proposed materials, including details of all joints between tile and adjoining materials

1.4.4 Mock-Up

1.4.5 Certification

1.5 QUALITY ASSURANCE:

1.5.1 Conform to ANSI A 137.1 as certified by TCA

1.6 QUALIFICATIONS:

1.6.1 Manufacturer.

1.6.2 Staff.

1.7 DELIVERY, STORAGE AND HANDLING:

1.7.1 Deliver products to site under provisions of Section 012513.

1.8 ENVIRONMENTAL REQUIREMENTS:

1.8.1 Do not install adhesives in a closed, unventilated environment.

1.8.2 Maintain 50 degrees F during installation of mortar materials.

PART 2 – PRODUCTS

2.1 CERAMIC TILE:

2.1.1 General

2.1.1.1 All tile for like applications shall be the product of a single manufacturer as indicated below.

2.1.1.2 Equal products of alternate manufacturers may be approved based on submittal review.

2.1.2 Product Characteristics: Exterior Wall Tile

2.1.3.1 Manufacturer: Dal – Tile.

2.1.3.2 Series: Keystones.

2.1.3.3 Color: Natural Hures Ceramics

2.1.3.4 Mix/Pattern Criteria: Field pattern.

2.1.3.5 Finish: Glazed

2.1.3.6 Size: 2 inch by 2 inch.

2.1.3.7 Grout Joint: Nominal 1/16 inch, all joints equal, except at expansion joint conditions. Provide minimum 1/8 inch wide joint at all expansion joint conditions.

2.1.3.8 Coefficient of Friction: Minimum 0.60 per ASTM C-1028.

2.2 PORTLAND CEMENT BOND COAT:

2.2.1 American Olean or equal, Multipurpose Dryset Mortar per ANSI A108.5 and A118.4.

2.3 GROUT:

2.3.1 All grouts shall be produced by same manufacturer, Laticrete or equal.

2.3.2 Epoxy Grouts: Custom Building Products Series Grout Solutions and shall exceed ANSI A 118.3. Color as selected by Architect from standard color line

2.4 SEALERS AND FINISHES:

2.4.1 Grout Sealer: Miracle Sealants 511 Impregnator, or as required by manufacturer.

2.5 ACCESSORIES:

2.5.1 Reinforcing Mesh: 2 by 2 inch square by 16 gauge welded wire mesh

2.5.2 Cleavage membrane: Provide CTI approved cleavage membrane.

2.5.3 Organic Adhesive: Type 1 organic adhesive, complying with ANSI A 136.1 and approved by CTI for application

2.6 WATERPROOFING AND CRACK ISOLATION MEMBRANES:

2.6.1 Thin-set Waterproofing Applications: NobleSeal TS, preformed sheet CPE membrane, 30 mil thickness, with facing. Provide preformed corners and all manufacturers recommended accessories.

2.6.2 Thin-set Joint Isolation Membrane: NobleSeal TS, preformed corners and all manufacturers recommended accessories.

2.6.3 Mortar bed waterproofing applications: NobelSeal Chloraloy 240, preformed sheet CPE membrane, 40 mil thickness. Provide preformed corners and all manufacturers recommended accessories.

2.7 MORTAR AND GROUT MIXES:

2.7.1 Mix and proportion cementitious materials for mortar and grout mixes in accordance with manufacturers requirements.

2.9.1.1 Do not mix more bond coat than can be used within 1 hour.

2.9.1.2 If bond coat mixture begins to skin, discard and make new batch

2.8 ACCESSORY TILE:

2.8.1 General

2.8.1.1 All accessory tile shall be in matching size, color, and finish.

2.8.1.2 Stretcher tile to be the standard size of the manufacturer.

2.8.1.3 Provide surface bullnose trim at all open edges or ends. Unglazed or cut tile edges unacceptable.

2.8.1.4 Provide surface bullnose trim at all tile abutting jamb conditions and extending beyond frame.

2.8.1.5 Provide full curved stretcher tile for all outside corners.

2.9 PROVIDE all other materials, not specifically described but required for complete and proper installation of this work, as selected by the contractor and subject to the approval of the Architect.

PART 3 – EXECUTION

3.1 SURFACE CONDITIONS:

3.1.1 Inspection

3.1.1.1 Prior to all work of this section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence. Starting work implies acceptance of surfaces as satisfactory.

3.1.1.2 Verify that work of this Section may be installed in strict accordance with the original design, all pertinent codes and regulations, and all pertinent portions of the referenced standards.

3.1.1.2.1 Verify joints in concrete substrate occur only at sealant expansion joint locations as specified for ceramic tile.

3.1.1.2.2 Where non-documented substrate cracks occur obtain direction from Architect.

3.1.1.3 Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.2 MEMBRANE INSTALLATION:

3.2.1 Verify wall preparation complies with criteria specified in Section 033000.

3.2.1.1 Remove all sealers, curing compounds and other materials affecting proper bond of membranes with bead blast abrasive equipment.

3.2.1.2 Cleavage Membrane: Unless otherwise shown on drawings, where mortar bed is installed over concrete slab on grade at interior applications, provide specified cleavage membrane.

3.2.2 Waterproofing Membrane Installation.

3.2.3 Apply waterproofing membrane per manufacturer's recommendations.

3.2.3.1 Apply thinset waterproofing membrane using approved latex modified mortar system.

3.2.3.1.1 Provide preformed corners. Seal all penetrations with specified sealant.

3.2.3.2 Detail all joints as required by manufacturer and approved submittal.

3.2.3.3 Extend membrane up wall surface as shown on drawings.

3.2.3.4 Allow sufficient time for all seams, transitions and setting beds to cure before installing subsequent materials.

3.2.4 Joint isolation membrane installation:

3.2.4.1 Install at all cracks in concrete slab substrates, control and expansion joints, and at all transitions between dissimilar materials.

3.2.4.2 Extend each side of crack or joint a minimum of four (4) times diagonal tile dimension.

3.2.4.3 Apply using approved latex modified mortar system.

3.2.4.4 At expansion joints, continue sheet material in looped fashion through joint to accommodate anticipated joint movement.

3.3 MORTAR BED INSTALLATION:

3.3.1 Unless noted otherwise, prepare wall substrate as required for complete bond. Remove all sealers, curing compounds and other materials affecting proper bond of membranes with bead blast abrasive equipment.

3.3.2 Coordinate lath and mortar bed installation with wall substrate joints. Align expansion joints in mortar bed and tile with wall substrate joints.

3.3.3 Install mortar bed in accordance with specified method and referenced ANSI standard.

3.3.4 Where waterproof membrane is provided, do not penetrate membrane. Provide accessory supports.

3.4 TILE INSTALLATION:

3.4.1 Install tile and grout in accordance with manufacturer's instructions and TCA Handbook methods as specified.

3.4.2 Spread bond coat over area of installation using a notched trowel. Do not spread more bond coat than can be covered with tile within manufacturers recommended time periods.

3.4.3 Cut and fit tile tight to penetrations through tile. Form corners and bases neatly. Utilize bull-nose trim shapes where tile terminates at dissimilar material in the same wall plane.

3.4.3.1 Use saw to cut tile fitting against curved surfaces or edges. Do not use nippers.

3.4.3.2 Use drill for all pipe or conduit penetrations. Do not split tile.

3.4.4 Place tile joints in uniform width, subject to variance in tolerance allowed in tile size. Make joints watertight, without voids, cracks, excess mortar, or excess grout.

3.4.5 Sound tile after setting. Replace hollow sounding units.

3.4.5.1 Back-butter all exterior tile installations.

3.4.6 Allow tile to set for a minimum of 48 hours prior to grouting, or a recommended by mortar manufacturer.

3.4.7 Ground tile joints. Do not allow grout to harden on face of tile.

3.4.8 Install sealant under the provisions of Section 079000 and as specified

3.4.9 Toilet Wall Tile Installation

3.4.9.1 Install wall tile at cementitious backer board per TCA Method W244-03, and per ANSI A.2.1.8. At masonry walls per TCA Method W201-03 and per ANSI A.2.1.8.

3.4.9.1.1 Provide Portland Cement leveling coat as required to provide surface complying with 1/8 inch in 8 feet tolerance.

3.4.9.2 Grout all wall joints with specified epoxy grout per ANSI A 108.10

3.4.10 Installation of expansion and control joint assemblies.

3.4.10.1 Provide expansion joints complying with TCA Detail EJ171-01 at the following specified locations and as located and shown on drawings:

3.4.10.1.1 At wall tile to paver/floor tile joints.

3.4.10.1.2 At all expansion and control joint in substrate. Where tile joint does not occur directly over substrate joint, provide sealant joint on each side of joint.

3.4.10.1.3 At tile joint at inside vertical corners.

3.4.10.1.4 At interior applications, at approximately 24 feet on center each way in floor and wall tile surfaces. Adjust to 12 feet at toilet tile conditions, and 8 feet for dark tile in sunlight areas.

3.4.10.1.5 Where material transitions occur, comply with expansion/control joint criteria.

3.4.10.1.6 At conditions where tile extends through doorways, extend wall cove/floor tile sealant joint across doorway.

3.4.10.1.7 At floor drain/tile edge, column penetrations, tile terminations against frames and other restraining elements.

3.4.10.1.8 At tile terminations against curbs, paving or other restraining elements.

3.5 CLEANING:

3.5.11 Clean work under provisions of 017400.

3.5.12 Clean tile surfaces in accordance with the tile and grout manufacturers.

3.5.13 Do not use muriatic acid compounds.

3.5.14 Do not allow traffic on tile for a minimum of 72 hours after installation.

3.5.15 Provide damp cure of all installations per manufacturer's recommendations and per ANSI A 108.

3.5.5.1 Do not damp cure latex modified grout systems unless recommended by manufacturer.

3.5.16 Sealing

3.5.16.1 Seal all interior toilet floor, base, and wall ceramic tile applications.

3.5.16.1.1 Do not seal epoxy grout applications

3.5.16.2 Seal per manufacturer's recommendations and CTI Report 72-2-2 (R85)

3.6 PROTECTION:

3.6.11 Protect finished installation under provisions of Section 011100.

3.6.12 Provide non-staining protective coverings for all tile in traffic area. Maintain protective covering until Architect approves removal of protective material. Replace damage protective material where occurs at no cost to the Owner.

3.6.13 Remove and replace any products that are cracked, scraped, or otherwise damaged after installation and before acceptance by Owner.

3.7 FIELD QUALITY CONTROL:

3.7.1 Tolerances

3.7.1.1 Grout joint alignment with adjacent edge: 1/8 inch in 10 feet.

3.7.1.2 Row and column alignment: 1/8 inch in 10 feet deviation.

3.7.1.3 Alignment with adjacent tile: 1/16 inch +/-.

3.7.1.4 Level, plane and/or vertical: 1/8 inch in 10 feet deviation.

3.8 EXTRA STOCK:

3.8.1 Provide sufficient field tile of each type and color to cover 10 square feet. In addition, provide tile of each type and color.

3.8.2 Package in clearly labeled containers, store as necessary until delivered to Owner.

END OF SECTION

SECTION 09 96 63

SILICONE ELASTOMERIC COATINGS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included

1. Surface preparation and the application of paint systems on existing exterior Portland cement plaster.

2. Protect existing surfaces not scheduled to receive paint.

B. Related Work:

1. Section 07 90 00 – Sealants.

1.02 REFERENCES

A. The following Standards are incorporated into these Specifications. Unless noted otherwise, comply with the current version of these Standards.

1. Society for Protective Coatings (SSPC) standards as referenced in this Section.

2. ASTM D16 – Definitions of Terms Relating to Paint, Varnish, Lacquer, and Related Products.

3. PDCA (Painting and Decorating Contractors of America) – Painting – Architectural Specifications Manual.

4. SSPC (Steel Structures Painting Council) – Steel Structures Painting Manual.

B. The following are incorporated into this specification by reference:

1. American Society of Testing and Materials (ASTM) International Standards.

2. Manufacturer's recommendations and guidelines, unless modified herein.

1.03 SUBMITTALS

A. Product Data: Manufacturer's technical literature for each product and system indicated.

1. Include manufacturer's specifications for materials, finishes, construction details, installation instructions, and recommendations for maintenance.

2. Include manufacturer's technical information and instructions for handling, storing, and applying each coating material proposed for use.

B. Samples for Verification Purposes: Of each color and material to be applied, with texture to simulate actual conditions, on representative samples of actual substrate.

1. Submit samples on same type of substrate as that to receive application, 8 in. square.

2. Step coats on samples to show each separate coat, including primers and block fillers as applicable. Use representative colors when preparing samples for review. Resubmit until required sheen, color, and texture are achieved.

3. Provide a list of materials and applications for each coat of each sample. Label each sample for location and application.

C. Product List: For each product indicated, including the following:

1. Cross-reference to coating system and locations of application areas. Use same designations indicated on Drawings and in schedules.

2. Manufacturer's recommended spreading rate for each separate coat, including primers and block fillers as applicable, for each type of substrate as applicable.

D. Manufacturer's Project Acceptance Document: Certification by the manufacturer that its product(s) are approved, acceptable, suitable for use in specific locations, for specific details, and for applications indicated, specified, or required and that a warranty will be issued.

E. Qualification Data: For applicator.

F. Maintenance Data: To include in maintenance manuals.

G. Warranty: Provide sample of warrantees, as specified herein, prior to beginning Work. Provide executed warrantees upon project closeout.

1.04 QUALITY ASSURANCE

A. Applicator Qualifications:

1. Experience: Applicator with not less than 5 yrs of experience in performing specified Work similar to scope of this Project, with a record of successful in-service performance and completion of projects for a period of not less than 5 yrs and with sufficient production capability, facilities, and personnel to produce required Work.

2. Supervision: Applicator shall maintain a competent supervisor who is at Project site during times specified Work is in progress that is experienced in applying systems similar to type and scope required for Project.

3. Manufacturer Acceptance: Applicator shall be certified, approved, licensed, or acceptable to manufacturer to apply products.

B. Manufacturer's Technical Representative Qualifications: Direct employee of technical services department of manufacturer with minimum of 5 yrs of experience in providing recommendations, observations, evaluations, and problem diagnostics. Sales representatives are not acceptable.

C. Mockups: Prior to application, provide mockup for each finish required to verify selections made under sample Submittals and to demonstrate aesthetic effects and qualities of materials and execution. Build mockup to comply with the following requirements, using materials indicated for the completed Work:

1. Prepare in-situ mockup of coating for each type of surface using same materials, tools, equipment, and procedures intended for actual surface preparation and application under actual use and environmental conditions.

2. Verify effectiveness of surface preparation.

3. Verify performance of coating.

4. Verify coating adhesion to substrate as specified under Field Quality Control in this section.

5. Provide mockup in the location and of the size indicated or, if not indicated, as directed by Architect / Engineer. Show typical components and requirements of installation.

6. Clean exposed faces of mockup.

7. Notify Architect / Engineer seven days in advance of the dates and times when mockup will be installed.

8. Demonstrate the proposed range of aesthetic effects and workmanship.

9. Obtain Architect / Engineer's acceptance of mockups before starting application.

10. Maintain mockups during construction in an undisturbed condition as a standard for review of the completed Work.

11. Acceptance of mockups does not constitute acceptance of deviations from the Contract Documents contained in mockups unless such deviations are specifically noted by Contractor, submitted to Architect / Engineer in writing, and accepted by Architect / Engineer in writing.

12. Acceptable mockups may become part of the completed work.

1.05 PRE-INSTALLATION CONFERENCE

A. Conduct a preconstruction conference held with representatives of the Owner, the Contractor, the Architect / Engineer, the Applicator, Manufacturer, and other involved trades to discuss the work covered under this Section.

1.06 PROJECT CONDITIONS

A. Work in conjunction with the other trades employed on the project by promptly completing the work of this Section as required to meet the project schedule so as not to impede other trades. Coordinate the work of this Section with other trades so that the intent of the Drawings and Specifications is carried out. Coordinate with other trades to maximize efficient use of scaffolding and to minimize disruption time to the building.

B. Apply coatings only when temperature of surfaces to be coated and ambient air temperatures are between 50°F and 90°F unless otherwise permitted by manufacturer's written instructions.

C. Do not spray coating in winds above 15 mph.

D. Do not apply coatings in snow, rain, fog, or mist; when relative humidity exceeds 85%; or at temperatures less than 5°F above the dew point; or to damp or wet surfaces.

1. Allow wet surfaces to dry thoroughly and attain temperature and conditions recommended by manufacturer before starting or continuing coating operation.

E. Prior to applying coating, ensure a minimum of 2 hrs of adequate temperature and humidity remains before start of nightfall or inclement weather.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

B. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45°F.

1. Maintain containers in clean condition, free of foreign materials and residue.

2. Remove rags and waste from storage areas daily.

3. Do not use materials after manufacturer's use-before date.

4. Store materials in a clean, dry area indoors in accordance with manufacturer's instructions.

1.08 PROTECTION, HANDLING, AND STORAGE

A. Keep materials dry while they are transported, stored, and delivered. Deliver materials in the manufacturer's unbroken containers. Store materials on pallets and cover with fireproof canvas tarpaulins completely, top to bottom. Polyethylene covers are not acceptable. Store materials in a secure area designated by the Owner with adequate tie-downs against wind gusts.

B. Store elastomeric materials, adhesives, solvents, and sealants in their original containers and between 60°F and 80°F. If exposed to lower temperatures, restore to a uniform temperature of no less than 60°F prior to use.

C. Materials shall be marked with the date of manufacture and shelf life. Do not use products beyond the expiration of their shelf life. Store flammable materials in a cool, dry, and protected area away from sparks and open flames.

1.09 WARRANTY

A. Manufacturer's Warranty: Furnish manufacturer's written material and labor warranty signed by an authorized representative using manufacturer's standard form agreeing to furnish materials and labor required to repair or replace work which exhibits material defects caused by manufacture or design and installation of product. "Defects" is defined to include but not limited to deterioration or failure to perform as required and water penetration through the coating.

1. Warranty Period: Manufacturer shall warrant the products to be free from material and labor Defects for a period of 10 yrs from date of Substantial Completion

B. Applicator's Warranty: Furnish applicator's written workmanship warranty signed by an authorized representative using applicator's standard form agreeing to provide labor required to repair or replace work which exhibits workmanship defects. "Defects" is defined to include but not limited to deterioration or failure to perform as required and water penetration through the coating.

1. Warranty Period: Applicator shall warrant the application to be free from workmanship Defects for a period of 2 yrs from date of Substantial Completion.

1.10 MAINTENANCE

A. Extra Materials: Furnish silicone elastomeric coating materials, from the same production run as the materials applied, in quantities described below. Package

materials in unopened, factory-sealed containers for storage and identify with labels describing contents. Deliver extra materials to the Owner.

1. Quantity: Furnish the Owner with an additional 5%, but not less than 1 gal. of each color applied.

PART 2 - PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. Provide vapor permeable silicone elastomeric wall coating, with crack bridging ability that is compatible with adjacent waterproofing systems and sealant materials.

2.02 MATERIALS, GENERAL

A. Single Source Responsibility: Furnish each type of product from single manufacturer. Provide secondary materials only as recommended by manufacturer of primary materials.

B. Material Compatibility: Provide silicone elastomeric finish coat system materials and related accessory materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by silicone elastomeric coating manufacturer based on testing and field experience.

1. For each material or coat, provide products and spreading rates recommended in writing by silicone elastomeric coating manufacturer for use on substrate indicated.

2.03 COATINGS

A. Elastomeric Coating: One-component, elastomeric, silicone, breathable, colored, high-solids, UV resistant, architectural coating

1. AllGuard Silicone Elastomeric Coating by Dow Corning.

2. Composition: Pigmented, water-based, silicone elastomer.

3. Color: As selected by Owner's Representative.

4. Solids content: 58.6% by weight, tested in Accordance with ASTM D2369.

2.04 ACCESSORY MATERIALS

A. Provide the following related accessory materials necessary for complete installation of silicone elastomeric coating system as recommended by silicone elastomeric coating manufacturer for substrate conditions and application requirements.

B. Sealant: Silicone elastomeric coating manufacturers recommended, factory-formulated sealant – Exterior Non-sag Silicone Sealant. Refer to Section 07 90 00 -

Sealants.

C. Primer: Compatible with surfaces and coating and approved by manufacturer.

D. Crack Fillers: Compatible with surfaces and coating and approved by manufacturer.

E. Masking Tape: Nonstaining, nonabsorbent material compatible with coatings and adjacent surfaces.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Acceptance of Surfaces and Conditions: Examine substrates to receive products and systems and associated work for compliance with requirements and other conditions affecting performance. Proceed only when unsatisfactory conditions have been corrected in a manner complying with Contract Documents. Starting work within a particular area will be construed as acceptance of surface conditions.

B. Begin coating only when moisture content of substrate is 12% or less when measured with an electronic moisture meter.

C. Substrates:

1. Existing: Verify suitability of substrates including surface conditions and compatibility with existing finishes and primers.

3.02 APPLICATION, GENERAL

A. Application Quality Standards: In addition to standards listed elsewhere, perform Work according to following, unless otherwise specified:

1. Respective manufacturer's written application instructions.

2. Accepted submittals.

3. Contract Documents.

3.03 PREPARATION

A. General: Comply with manufacturer's instructions, recommendations, and specifications for cleaning and surface preparation. Surfaces shall have no defects, contaminants, or errors which would result in poor or potentially defective application or would cause latent defects in Work.

B. Remove items already installed that are not to be coated. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and coating. After completing coating operations in each area, reinstall items removed, using workers skilled in trades involved.

C. Cleaning: Before applying coatings or other surface treatments, clean substrates of substances that could impair bond of coating systems. Remove oil and grease before cleaning. Schedule cleaning and coating application so dust and other contaminates will not fall on wet, newly coated surfaces.

D. Surface Preparation: Clean and prepare surfaces to be coated according to manufacturer's written instructions for the particular substrate conditions and as specified.

1. Cementitious Surfaces: Prepare concrete, concrete masonry, stucco, and similar surfaces to receive coatings. Remove efflorescence, chalk, dust, dirt, release agents, grease, oils, and similar conditions by water blasting followed by a clear water rinse.

a. Remove mildew and neutralize surfaces according to manufacturer's written recommendations before patching materials are applied.

b. Roughen as required to remove glaze. Use abrasive blast-cleaning methods if recommended by coating manufacturer.

c. If hardeners or sealers have been used to improve concrete curing, use mechanical methods for surface preparation.

d. Determine alkalinity and moisture content of surfaces to be coated by performing appropriate tests. Do not apply coatings over surfaces where moisture content exceeds that permitted in manufacturer's written instructions.

2. Crack Repair: Remove dust and dirt from around cracks. Remove mildew by sterilizing before filling.

a. Small defects and cracks (non-structural – less than 1/16 in. wide): Repair with sealant, spread over 2 in. wide area over the center of the crack and feather to zero. Allow a minimum 24 hrs to cure before over-coating.

b. Large defects and cracks (non-structural – more than 1/16 in. wide): Rout to 1/4 in. by 1/4 in. deep. Vacuum and air-blow with oil-free air dust and debris and fill with sealant. Allow a minimum 24 hrs to cure before over-coating.

c. Structural cracks of any thickness must be repaired and stabilized to prevent movement.

E. Repair spalls with repair mortar following manufacturer’s installation instructions.

F. Material Preparation: Mix and prepare materials according to coating manufacturer's written instructions.

1. Stir materials before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film that may form into material. Remove film and, if necessary, strain coating material before using.

2. If manufacturer permits thinning, use only thinners recommended by manufacturer, and only within limits recommended by manufacturer.

G. Protect surrounding areas and surfaces not intended to be coated from damage during surface preparation and application.

1. Misapplied uncured or partially cured coating on non-porous surface shall be removed by wiping with dry clothes or cloths wet with mineral spirits followed by dry cloths. Cured coating may be removed from nonporous surfaces such as glass or metal by razor scraping. Removal from porous surfaces such as stone, concrete or wood should be attempted as described above for non-porous surfaces. It may be necessary to abrade sandblast or sand the cleaned porous surface to remove all traces of stain. Plants and animal life should be removed from exposure or provided with positive protection from overspray or misapplication of coating.

2. Removal of misapplied coatings is the responsibility of the applicator.

3. After the coating is applied, the contractor shall remove all masking and other protection and clean up any remaining defacement caused by this work.

3.04 APPLICATION OF SILICONE ELASTOMERIC COATINGS

A. General: Apply silicone elastomeric coatings to exposed surfaces indicated, according to manufacturer's written instructions.

B. Coating: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration. Apply uniform, pinhole-free coating in two (2) separate coats at spreading rate required to achieve a minimum dry film thickness of 0.010 in. (10 mils). Apply coating in accordance with manufacturer’s instructions at locations indicated on the drawings.

1. The number of coats and film thickness required are the same regardless of application method.

2. Each application should be applied at a wet thickness of 0.006 to 0.007 in. (6-8 mils WFT) per coat, depending on surface condition.

3. The second coat may be applied when the first coat is tack free to the touch. A tack free condition will usually take at least one (1) hour at 70-80°F; cooler temperatures may require more time. Full curing will usually take seven to ten days and can be verified by absence of solvent odor.

4. Ensure surfaces to receive coating are clean, dry, structurally sound, and free of frost and frozen materials. Application at temperature below 40°F should be done with caution due to the possibility of dew or frost on the surface and long drying time.

5. Do not dilute coating.

6. Ensure silicone sealants to be coated are fully cured and clean.

7. If undercoats or other conditions show through final coat, apply additional coats until coating film is of uniform finish, color, and appearance.

8. Ensure that surfaces, including edges, corners, and crevices receive a dry film thickness equivalent to that of flat surfaces.

9. Allow sufficient time between successive coats to permit proper drying.

10. Do not recoat surfaces where application of another coat would cause undercoat to lift or lose adhesion.

C. Application Procedures: Apply silicone elastomeric coatings by rollers or brushes.

1. Rollers: Use professional-quality quick-release rollers of carpet, velvet back, or high-pile sheep's wool covers as recommended by the manufacturer for material and texture required.

2. Minimum Coating Thickness: Apply each material no thinner than manufacturers recommended spreading rate. Provide total dry film thickness as recommended by the manufacturer.

D. Roller Application: Keep the cover wet at all times; do not dry roll. Work in sections. Lay on required amount of material, working material into grooves and rough areas; then level material, working it into surface.

E. Completed Work: Match accepted samples for color, texture, and coverage. Remove, refinish, or recoat work not complying with specified requirements. Finish elastomeric coating shall have no pinholes, spotting, holidays, laps, brush marks, runs, sags or other visible surface imperfections and shall fully coat the wall surface.

3.05 FIELD QUALITY CONTROL

A. Manufacturer’s Field Service: Manufacturer’s qualified technical representative shall inspect first day’s Work and periodically inspect Work to ensure application is proceeding in accordance with manufacturer’s designs, recommendations, instructions, and warranty requirements. Representative shall submit written reports of each visit indicating observations, findings, and conclusions of inspection.

B. Verify total dry film thickness of coating is as specified using dry film gauge. Coating thickness may be verified by measuring the thickness of the cured coating piece with a micrometer.

C. Verify wet film thickness of coating in each coat is as specified using wet film gauge periodically during installation.

D. Field Adhesion Testing:

1. Cross Hatch (X) Method: Verify coating adhesion to substrate following full cure.

a. Cut a small “X” in coating down to substrate.

b. Start at crossover point of “X” and lift an edge of coating with sharp blade until it can be held with fingertips.

c. It should not be possible to peel coating from surface.

d. Good adhesion will be evident by breaking of coating film.

e. Repaint adhesion test area.

f. Frequency:

1) Mockup: At least three.

2) In-construction: At least ten.

2. Cheesecloth Pull-Test:

a. Imbed a cheesecloth strip 1 in. by 12 in. in the wet coating.

b. Apply second coating over the cheesecloth at recommended rate.

c. Allow seven to fourteen days of cure time.

d. Test adhesion of the coating by pulling the uncoated part of the cheesecloth at a 180 deg angle at a slow, steady rate.

e. Inspect and note the percentage failure.

f. At least 80% of the coating shall remain on the substrate.

g. Frequency:

1) Mockup: At least three.

2) In-construction: At least ten.

E. Patch test areas in accordance with manufacturer’s instructions.

F. Check coating for film characteristics or defects that would adversely affect performance or appearance.

G. Correct nonconforming work.

3.06 CLEANING

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from the Project site.

B. After completing coating work, clean glass, and spattered surfaces. Remove spattered coatings by washing, scraping, or other methods, being careful not to scratch or damage adjacent finished surfaces.

3.07 PROTECTION

A. Protect work of other trades from damage whether being coated or not. Correct damage by cleaning, repairing, replacing, and recoating as approved by the Architect. Leave in an undamaged condition.

B. Protect applied coating from rain or damage until fully cured.

C. Provide "Wet Paint" signs to protect newly coated finishes. Remove temporary protective wrappings provided by others to protect their work after completing coating operations.

D. After construction activities of other trades are complete, touch up and restore damaged or defaced coated surfaces.

END OF SECTION