PROJECT MANUAL

including specifications
for construction of

FIRE STATION NO. 4
Addition and Remodel

5205 Calle Mayor
Torrance, California 90505

for

The City Of Torrance
Fire Department

CITY OF TORRANCE GENERAL SERVICES DEPARTMENT
3031 Torrance Boulevard
Torrance, California 90503

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CUTTING AND PATCHING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included:

1. Procedural requirements for cutting and patching of Work.

2. Cutting of new openings in floors and walls as per Drawings.

3. Patching of new openings in floors and walls as per Drawings.

B. Related Work:

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

2. Divisions 2 through 26 Sections and Drawings for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1.2 DEFINITIONS

A. Cutting: Removal of existing construction necessary to permit installation or performance of other Work.

B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.3 SUBMITTALS

A. Written Requests for Cutting and Alteration:

1. At least 10 days before the time cutting and patching will be performed, submit written request to Architect and City for approval to proceed with cutting or alteration which affects:

a. Structural integrity of any element of new or existing construction.

b. Integrity of weather-exposed or moisture-resistant elements.

c. Efficiency, maintenance, or safety of operational elements.

d. Visual qualities of elements exposed to view in the completed construction.

e. Existing construction not otherwise indicated to be revised by Work.

2. Include in requests for cutting and alteration:

a. Identification of Project.

b. Changes to Existing Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements. Include shop drawings as necessary to identify locations and communicate descriptions.

c. Explanation of necessity for cutting and patching.

d. Description of proposed work, products to be used and firms or entities that will perform the work.

e. Alternatives to cutting and patching.

f. Indicate date and time cutting and patching work will be performed.

g. Utilities: List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out of service. Indicate how long service will be disrupted.

3. Architect's or City’s Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.4 QUALITY ASSURANCE

A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.

B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.

C. Miscellaneous Elements: Do not cut and patch the following elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.

1. Water, moisture, or vapor barriers.

2. Membranes and flashings.

3. Equipment supports.

4. Piping, ductwork, vessels, and equipment.

5. Noise- and vibration-control elements and systems.

D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

1.5 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Primary Products: As required for original installation and to match surrounding construction.

B. Product Substitution: For each proposed change in materials, submit request for substitution under provisions of City of Torrance documents.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Inspect existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. Inspect conditions affecting proper accomplishment of Work.

1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

B. Beginning of cutting or patching shall be interpreted to mean that existing conditions were found by the Contractor to be acceptable.

3.2 PREPARATION

A. Provide temporary supports to ensure structural integrity of the Work.

B. Provide devices and methods to protect other portions of Project from damage.

C. Provide protection from elements for areas which may be exposed by uncovering work.

D. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

E. Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to minimize interruption of services to occupied areas.

3.3 PERFORMANCE

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Coordinate installation or application of products for integrated work.

2. Uncover completed work as necessary to install or apply products out of sequence.

3. Remove and replace defective or non-conforming work.

4. Provide openings in the work for penetration of mechanical and electrical Work.

5. Execute cutting and patching by methods to avoid damage to adjoining work, and which will provide appropriate surfaces to receive final finishing.

6. Execute cutting and patching of weather-exposed, moisture-resistant elements and surfaces exposed to view by methods to preserve weather, moisture and visual integrity.

B. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

2. Cut rigid materials using diamond grit abrasive saw or similar cutter for smooth edges. Do not overcut corners.

a. Core drill holes through concrete and masonry.

b. Pneumatic tools will not be allowed without prior approval.

3. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.

4. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.

5. Proceed with patching after construction operations requiring cutting are complete.

C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.

2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

a. For continuous surfaces, refinish to nearest intersection or natural break.

b. For an assembly, refinish entire unit.

3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

4. Ceilings: Patch, repair, or re-hang existing ceilings as necessary to provide an even-plane surface of uniform appearance.

5. Fit work neat and tight allowing for expansion and contraction. Butt new finished to existing exposed structure, pipes, ducts, conduit, and other penetrations through surfaces.

6. Penetrations at Fire-Rated Construction: At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with material, to full thickness of the penetrated element.

END OF SECTION

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SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Selective demolition, dismantling, cutting and alterations as indicated, specified, and required for completion of the Contract; removal and disposal, off site, of interior and exterior building finishes, structures, equipment and materials as indicated on Drawings. Following is a partial list.

1. Protecting existing work to remain.

2. Cleaning soiled materials that are to remain.

3. Disconnecting and capping utilities.

4. Removing debris and equipment.

5. Removal of items, as indicated on Drawings.

6. Salvageable items to be retained by the City.

B. Additional demolition required to install, repair, remove and replace work as required by the Drawings.

C. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Divisions 1 - 33 of these Specifications and the Drawings.

1.2 SUBMITTALS

A. General: Submit the following in accordance with City of Torrance documents.

1. Proposed schedule of operations coordination for shutoff, capping, and continuation of utility services as required.

2. Provide a detailed sequence of selective demolition and removal work to assure uninterrupted progress of on site operations.

1.3 JOB CONDITIONS

A. Occupancy: Areas requiring demolition will be vacated and use discontinued prior to start of work.

B. Environmental Requirements: Accomplish wrecking and demolition in a selective manner that provides for the safety of the public and all workers and provides for the protection of all property not to be wrecked or demolished. Methods shall be subject to City’s approval.

C. Conform to applicable regulatory procedures upon discovering hazardous or contaminated materials.

D. Explosives: Use of explosives will not be permitted.

E. Flame Cutting: Do not use cutting torches or flame producing devices for removal until work area is cleared of flammable materials. At concealed spaces, such as interior of ducts and pipe spaces, verify condition of hidden space before starting flame-cutting operations. Maintain portable fire suppression devices during flame-cutting operations and follow City's safety procedures.

F. Pollution Controls: Use water sprinkling, temporary enclosures, and other suitable methods to limit dust and dirt rising and scattering in air. Comply with governing regulations pertaining to environmental protection. Do not use water when it may create hazardous or objectionable conditions such as flooding, and pollution.

G. Erect temporary covered passageways as required by authorities having jurisdiction.

H. Provide interior and exterior shoring, bracing, or support to prevent movement, settlement, or collapse of structures to be demolished and adjacent facilities to remain.

I. Traffic: Conduct demolition operations and removal of debris to assure minimum interference with roads, streets, walks, corridors, and other adjacent occupied and used facilities. Do not close or obstruct streets, walks, or other occupied or used facilities without permission from the City. Provide alternate routes around closed or obstructed traffic ways if allowed by the City.

J. Protection: Refer to City of Torrance documents. Provide all safeguards, including warning signs and lights, barricades, and the like, for protection of the City's personnel and general public during demolition. Provide appropriate temporary signage including signage for exit or building egress.

K. Utility Services: Maintain existing utilities indicated to stay in service and protect against damage during selective demolition operations. Refer to Drawings for additional requirements in disconnecting, removing, and capping of utility services. Do not start demolition work until utility disconnections have been completed and verified in writing.

1.4 QUALIFICATIONS

A. Demolition Firm: Company specializing in performing the work of this Section with minimum five (5) years documented experience.

PART 2 - PRODUCTS

2.1 HANDLING OF MATERIALS

A. Remove all existing items to be reused or retained by the City by the use of proper tools to insure against damage.

B. Clean, package, label and deliver to the City's Representative salvaged items to be retained by the City and not incorporated into work, unless otherwise instructed.

C. Store on site and protect from damage, soiling and theft items to be reused.

PART 3 - EXECUTION

3.1 INSPECTION

A. Condition of Premises: Accept the premises as found and clear the Project Site as specified.

B. Do not begin demolition until temporary partitions, barricades, warning signs and other forms of protection are installed.

3.2 COORDINATION

A. Coordinate selective demolition with other trades to assure correct sequence, limits, and methods of proposed demolition. Schedule work to create least possible inconvenience to operation of the facility.

3.3 SELECTIVE DEMOLITION

A. Locate demolition equipment throughout structure and remove materials so as to not impose excessive loads to supporting walls, floors, or framing.

B. Proceed with demolition in systematic manner, from top of structure to ground. Complete demolition work above each floor or tier before disturbing supporting members on lower levels.

C. Completely remove all abandoned utilities within the new Project area encountered during construction. Cap or plug the ends of abandoned utilities as approved.

D. Remove structural framing members as required and lower to ground by hoists, derricks, or other suitable methods. Break up and remove concrete slabs on grade indicated for removal. Cease operations and notify Architect immediately if safety of structure appears to be endangered. Take precautions to support structure until determination is made for continuing operations.

E. If unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure both nature and extent of the conflict. Submit report to the Architect in written, accurate detail. Pending receipt of directive from the Architect, rearrange

selective demolition schedule as necessary to continue overall job progress without undue delay.

F. Protect from damage existing finish work that is to remain in place and becomes exposed during demolition operations.

1. Cover and protect fixtures from soilage or damage when selective demolition work is performed in areas where such items have not been removed.

2. Protect floors with suitable coverings when necessary.

G. Provide weatherproof closures for exterior openings resulting from selective demolition work.

H. Do not throw materials from heights. Use ramps or chutes.

I. Where openings are cut oversize or in improper location, replace the excess removed material as instructed by the Architect at no additional cost to the City.

3.4 CUTTING EXISTING CONCRETE

A. Cutting of existing concrete shall be performed by experienced workmen familiar with the requirements and space necessary for placing concrete. All cutting shall be executed under the direct supervision of the Contractor. In general, use concrete cutting wheels and hand chisels. Care should be taken not to shatter concrete that is to remain.

B. Determine the extent of cutting of concrete by figured dimensions on Drawings. Replace any concrete removed in excess of amount indicated, specified or required, as directed by the Architect at expense of Contractor.

C. Prior to cutting or coring concrete, verify location of utilities which might be embedded therein or in close proximity and take necessary measures to protect them.

3.5 REMOVAL OF OTHER MATERIALS

A. Woodwork: Cut or remove to a joint or panel line. Undamaged, removed material, may be reused.

B. Plaster: Saw cut plaster on straight lines but leave a minimum of 2" of firmly attached metal lath where tying to new lath/plaster.

C. Work not mentioned to be removed that interferes with new construction shall be cut to clean-cut lines to provide for proper interface with new construction, or patching and repair, as required. Verify with Architect before cutting and removal.

D. Existing facilities, equipment or work that is not indicated to be removed, but interferes with new construction, shall be cut neatly and removed as required to

facilitate installation of new work, and then replaced and finished as specified for new work. Verify with Architect before cutting and removal.

E. Do not cut any structural members unless it is detailed on the Drawings and approved by the Architect/Engineer.

3.6 PATCHING

A. Patch materials which are to remain when damaged by this work. Finish material and appearance of patch or repair work shall match existing contiguous materials and finishes in all respects, as approved by Architect.

3.7 SALVAGED MATERIALS

A. Remove carefully to avoid damages. Except for items indicated to be retained as the City's property, other removed and salvaged materials not indicated for reuse shall become Contractor's property and removed from site with further disposition at the Contractor's option.

B. Items of salvable value to Contractor may be removed from structure as work progresses. Transport salvaged items from site as they are removed. Storage or sale of removed items will not be permitted on site.

3.8 ADJUSTMENT AND CLEANING

A. Repairs and Replacements: Clean up, repair, or replace at no cost to the City all property damaged by reason of required work, including restoring all disturbed areas, surfaced and unsurfaced, to their original condition on completion of the work as approved. All patchwork shall match existing. Painted surfaces shall be painted to match the adjacent areas.

B. Upon completion of demolition work, remove tools, equipment, and demolished materials from site. Remove protections (unless needed for remaining work) and leave interior areas broom clean.

1. Repair building elements where demolition was performed in excess of that required. Return building elements and surfaces to remain to condition existing prior to start operations.

2. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.

3.9 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove periodically from site accumulated debris, rubbish, and other materials resulting from selective demolition operations. City has the right to remove accumulated debris at Contractor’s expense if debris is not removed in a timely manner.

B. Burning of combustible materials from demolished structures will not be permitted on site.

C. Unless otherwise specified, all materials removed shall become the property of Contractor and shall be removed completely away from the Project Site for disposal at a legal dumping site. Secure and pay for required hauling permits and pay dumping fees and charges.

D. Coordinate parking trucks at building with the City's Representative.

E. Convey debris by trucks designed to transport rubbish and debris.

F. Dampen debris by fog water spray when it is transported from its location to truck. Control amount of water to insure against water ponding at area of debris pick-up.

G. Keep debris pick-up area broom-clean and flush with clean water, when necessary, to remove soil.

END OF SECTION

SECTION 03 35 43

POLISHED CONCRETE FINISHING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide sealer and hardener, and polishing of integrally colored interior concrete where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Structural Drawings: Cast-In-Place Concrete.

1.2 REFERENCES

A. ADA - Americans with Disbilities Act.

B. ASTM C779/C779M - Standard Test Method for Abrasion Resistance of Horizontal Concrete Surfaces.

C. ASTM C805/C805M - Standard Test Method for Rebound Number of Hardened Concrete.

D. ASTM G152 - Standard Practice for Operating Open Flame Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials.

E. ASTM G153 - Standard Practice for Operating Enclosed Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials.

F. SCAQMD (South Coast Air Quality Management District) Rule 1113 - Architectural Coatings.

1.3 QUALITY ASSURANCE

A. Installer Qualifications:

1. Use a certified installer and adequate number of skilled workmen who are thoroughly trained and experienced in the necessary craft.

2. The special concrete finish manufacturer shall certify applicator.

3. Applicator shall be familiar with the specified requirements and the methods needed for proper performance of work of this Section. Applicator must have availability of proper equipment to perform work within scope of this Project on a timely basis. Applicator should have successfully performed a minimum of five (5) projects of at least 5000 square feet each.

B. Mock-Ups: Apply mock-ups of each type finish, to demonstrate typical joints, surface finish, color variation (if any), and standard of workmanship.

1. Build mock-ups approximately 30 square feet in the location indicated or if not indicated, as directed by the Architect.

2. Notify Architect seven days in advance of dates and times when mock-ups will be constructed when practical.

3. Obtain from the Architect approval of mock-ups before starting construction.

4. If the Architect or City's Representative determines that mock-ups do not meet requirements, demolish and remove them from the Site and cast others until mock-ups are approved.

5. Maintain mock-ups during construction in an undisturbed condition as a standard for judging the completed work.

6. Approved mock-ups may become part of the completed work if undisturbed at time of Substantial Completion.

C. Protection: No satisfactory chemical or cleaning procedure is available to remove petroleum stains from the concrete surface. Prevention is therefore essential.

1. All hydraulic powered equipment must be diapered to avoid staining of the concrete.

2. No trade shall park vehicles on the inside slab. If necessary to complete their scope of work, place drop cloths under vehicles at all times.

3. Use no pipe cutting machines on the inside floor slab.

4. Do not place steel on interior slab.

5. All equipment shall be equipped with non-marking tires.

D. Pre-Installation Conference: Conduct conference at Project Site to comply with requirements of the City's administrative requirements.

E. Concrete floor sealer must meet the requirements of SCAQMD Rule 1113.

1.4 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

B. Product Data:

1. Submit materials list, manufacturer's specifications and other data needed to prove compliance with the specified requirements.

2. Submit manufacturer's recommended installation procedures, which when approved by the Architect, will become the basis for accepting or rejecting actual installation procedures used on the Work.

3. Submit technical data sheet giving descriptive data, curing time, and application requirements.

4. Submit Material Safety Data Sheet (MSDS) and other safety requirements.

C. Test Reports: Provide certified test reports, prepared by an independent testing laboratory, confirming compliance with specified performance criteria.

D. Samples: Supply manufacturer’s lab samples to show a smooth surface indicative of the gloss, not the mix color or aggregate size, color or amount of aggregate exposed.

E. Manufacturer’s Certification: Provide letter of certification from concrete finish manufacturer stating that installer is certified applicator of special concrete finishes, and is familiar with proper procedures and installation requirements required by the manufacturer.

1.5 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

B. Deliver materials in original containers, with seals unbroken, bearing manufacturer labels indicating brand name and directions for storage.

C. Dispense special concrete finish material from factory-numbered and sealed containers. Maintain record of container numbers.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Comply with manufacturer’s written instructions for substrate temperature and moisture content, ambient temperature and humidity, ventilation, and other conditions affecting topping performance.

1. Concrete must have an average Floor Flatness rating of at least 50.

2. Concrete must have an average Floor Levelness rating of at least 30.

3. Concrete must be cured a minimum of 28 days or as directed by the manufacturer before concrete finishing can begin.

4. Application of finishing product shall take place 10 days prior to installation of equipment and substantial completion, thus providing a complete, uninhibited concrete slab for application.

B. Close areas to traffic during floor application and after application, for time period recommended in writing by manufacturer.

C. City of Torrance will be responsible for providing disposal of slurry and finish by-products in compliance will all applicable codes.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Hardening/Sealing Agent:

1. RetroPlate 99 manufactured by Advanced Floor Products, Inc., P.O. Box 50533, Provo, Utah 84603, 888-942-3144, www.retroplatesystem.com, or equal.

2. Performance Criteria:

a. Abrasion Resistance: ASTM C779, Up to 400% increase in abrasion resistance.

b. Impact Strength: ASTM C805, Up to 21% increase in impact strength.

c. Ultra Violet Light and Water Spray: ASTM G152 and G153, No adverse effect to ultra violet and water spray.

d. Reflectivity: Up to 30% increase in reflectivity.

3. Certified Applicator: Contact Jeff Springston at RetroPlate for list of Certified Applicators, jeff.springston@comcast.net, 561-756-0745.

4. Reactive penetrating sealers for application to concrete substrates must not exceed the VOC limit of 350 g/L set by the SCAQMD Rule 1113.

B. RetroPlate Diamond pads distributed by Advanced Floor Products, Inc., or equal.

C. Fly Ash: No more than 20% of the weight of the Portland Cement should be substituted for with Class C fly ash.

D. Product Variations: The variegated colors and appearance are unique to each concrete surface and depend on the chemical composition, mix design, porosity, age, texture and color of the concrete substrate. Mottling and wide variations in color and intensity may occur. If contaminants remain on the surface, the penetration of the product may be blocked. Concrete from different loads or pours, and in patched areas, may appear significantly different in color from adjacent areas, when treated with the product.

2.2 OTHER MATERIALS

A. Water: Potable.

B. Provide other materials, not specifically described but required for a complete and proper installation, subject to the approval of the Architect.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine substrate, with installer present, for conditions affecting performance of finish. Correct conditions detrimental to timely and proper work. Do not proceed until unsatisfactory conditions are corrected.

B. Verify that base slab meets finish and surface profile requirements on the Drawings and in Article 1.6 above.

C. Prior to application, verify that floor surfaces are free of construction laitance.

3.2 APPLICATION

A. Prepare floor for hardening and sealing application with specified diamond grinding steps, followed by the application of hardening and sealing agent and final polishing steps. Start any of the floor finish applications in presence of manufacturer's technical representative if practical.

B. Sealing, Hardening and Polishing of Concrete Surface:

1. Only a certified applicator shall apply the specified products. Applicable procedures must be followed as recommended by the product manufacturer and as required to match approved test sample.

2. Aggregate Exposure: Grind the concrete floor surface to a Class B level of exposed aggregates, achieving fine aggregate (salt and pepper) exposure with little or no medium aggregate exposure at random locations.

3. Polish to pre-determined level based on test sample. Process the concrete floor surface to a Level 2 satin (honed) finished gloss, achieving a low to medium sheen and a matte appearance with or without slight diffused reflection.

4. Coefficient of Friction: Level of finish must exceed ADA recommendations for wet and dry hard surfaces.

5. Achieve waterproofing, hardening, dust-proofing, and abrasion resistance of the surface without changing the natural appearance of the concrete, except for the sheen. In addition, lack of adherence to F(f) flatness and F(l) levelness specifications can increase the mottled appearance and irregular exposure of aggregate.

6. Finish to within 1/2" of vertical surfaces where practical.

3.3 WORKMANSHIP AND CLEANING

A. The premises shall be kept clean and free of debris at all times.

B. Remove spatter from adjoining surfaces, as necessary.

C. Repair damages to surface caused by cleaning operations.

D. Remove debris from Jobsite. Dispose of materials in separate, closed containers as provided by the City, and in accordance with local regulations.

3.4 SPECIFIC QUALIFICATIONS/EXCLUSIONS

A. This Article, though not mandatory, will greatly improve the understanding and necessary procedures for performing this work properly.

B. Any unforeseen or hidden conditions requiring repair will be billed at time and materials basis.

C. Applicator will assume that there is adequate access to electricity and water, and that adequate lighting is provided. 3 Phase 220 50 amp service is required.

D. Applicator will assume that the floor has not been exposed to the elements. If weather damage has occurred, additional grinding will be billed at time and materials basis.

E. Removal of contamination of the slab by soil, foot prints, drag marks, welding marks, hydraulic fluids, or any other outside contaminant will be billed at time and materials basis, and will be performed to the best of ability, but without guarantee of removal.

F. Applicator will assume that the hardening and sealing system will be applied prior to the installation of any floor covering.

G. This cleaning and sealing of concrete is a wet process and could damage adjacent surfaces, on the immediate floor area, or even the floor levels below. The applicator will endeavor to tape and protect areas adjacent to their work areas to the best of their abilities, but in no case will they be held liable for water damage that occurs to electrical equipment, ceiling tiles, light fixtures, or other adjacent finishes.

H. No other trades shall be allowed in the area being worked on due to possible safety and floor contamination issues.

I. The areas to receive the hardening and sealing system shall be delivered to the applicator in clean and swept condition. Remove all equipment and supplies prior to turning the space over to the applicator. If the applicator is required to clean the space, and/or move other’s supplies, staging and equipment, it will be done on a time and materials basis.

3.5 PROTECTION

A. Protect finished work until fully cured in accordance with manufacturer’s recommendations. Contractor shall be responsible for protecting the polished floor until Substantial Completion.

END OF SECTION

SECTION 03 48 00

PRECAST CONCRETE SPECIALTIES

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide precast concrete splash blocks and precast concrete parking bumpers (wheel stops) as shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

B. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Structural Drawings: Cast-In-Place Concrete.

2. Section 07 62 00: Sheet Metal Flashing and Trim.

3. Section 32 17 23.13: Painted Pavement Markings.

1.2 REFERENCES

A. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.

1.3 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Precast concrete specialties shall be manufactured by a company specializing in the manufacture of precast concrete appurtenances.

1.4 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

B. Product Data:

1. Submit information describing adhesive for parking bumpers.

2. Submit information describing the materials used in the manufacture of the wheel bumpers and splash blocks.

C. Shop Drawings: Submit shop drawings for precast concrete parking bumpers and splash blocks, including a plan layout and installation details.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Precast Concrete Splash Blocks: As required.

B. Precast Concrete Parking Bumpers:

1. 4'-0" long x 5 ½" high x 7 ½" wide.

2. Minimum Compressive Strength: 3,500 pounds per square inch (psi) minimum at 28 days.

3. Air Content: 5 to 8 percent.

4. Provide chamfered corners and drainage slots on underside.

5. Reinforcing Bar: Equivalent to one No. 4 deformed billet steel conforming to ASTM A615, Grade 60, longitudinally placed, with welded stirrups.

6. Adhesive for Securing of Concrete Wheel Bumpers to Substrate: An epoxy two-component type, long curing, manufactured by ChemCo Systems (800)-757-6773 or equal.

C. Fabrication, General: Cast in smooth, well-oiled forms. Remove from forms as soon as blocks can be handled without damage.

PART 3 - EXECUTION

3.1 PARKING BUMPERS INSTALLATION

A. Locations: Locate where shown on Drawings or as directed. Bumpers are intended at all parking stalls where curbs are not present, to act as wheel stops.

B. Surface Preparation: Thoroughly clean surfaces to receive parking bumpers free of dirt, sand, oil, grease and other matter detrimental to proper placement.

C. On Portland Cement Concrete Pavements:

1. Comply with manufacturer's instructions for adhesive. Surfaces to receive adhesive to be free of laitance, dirt, loose particles or other foreign matter and completely cured and dry.

2. Secure bumpers in place with full butter coat of epoxy adhesive in exact location, with no squeeze out of adhesive. Protect bumper from dislocating until adhesive sets.

3. Slightly roughen the smooth surfaces as recommended by the adhesive manufacturer to provide for proper bond. Properly cure the adhesive after placing of bumper unit.

3.2 SPLASH BLOCKS INSTALLATION

A. Provide one splash block at each downspout, as indicated on Drawings to provide positive drainage away from building wall toward local site drain. Bed splash block firmly after topsoil has been placed. Slope away from structure.

3.3 CLEANING AND REPAIR

A. Repair damaged surfaces to acceptance of the Architect. Clean items to remove dirt and stains.

END OF SECTION

SECTION 05 50 00

METAL FABRICATIONS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide miscellaneous metal work items fabricated from metal shapes, which are not part of structural metal or other metal systems, as shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

B. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Structural Drawings: Structural Steel for Buildings.

2. Section 05 52 13: Pipe and Tube Railings.

3. Section 09 90 00: Painting and Coating.

1.2 REFERENCES

A. ANSI A14.3 - American National Standards for Ladders-Fixed-Safety Requirements.

B. ASME B18.2.1 - Square, Hex, Heavy Hex, and Askew Head Bolts and Hex, Heavy Hex, Hex Flange, Lobed Head, and Lag Screws (Inch Series).

C. ASME B18.6.1 - Wood Screws (Inch Series).

D. ASME B18.6.3 - Machine Screws, Tapping Screws, and Metallic Drive Screws (Inch Series).

E. ASME B18.21.1 - Washers: Helical Spring-Lock, Tooth Lock, and Plain Washers (Inch Series).

F. ASTM A27/A27M - Standard Specification for Steel Castings, Carbon, for General Application.

G. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.

H. ASTM A47/A47M - Standard Specification for Ferritic Malleable Iron Castings.

I. ASTM A48/A48M - Standard Specification for Gray Iron Castings.

J. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.

K. ASTM A108 - Standard Specification for Steel Bar, Carbon and Alloy, Cold-Finished.

L. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

M. ASTM A283/A283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates.

N. ASTM A307 Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60,000 PSI Tensile Strength.

O. ASTM A336/A336M - Standard Specification for Alloy Steel Forgings for Pressure and High-Temperature Parts.

P. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.

Q. ASTM A501/A501M - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.

R. ASTM A563 - Standard Specification for Carbon and Alloy Steel Nuts.

S. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

T. ASTM A663/A663M - Standard Specification for Steel Bars, Carbon, Merchant Quality, Mechanical Properties.

U. ASTM A780/A780M - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings.

V. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

W. ASTM B633 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel.

X. ASTM C1107/C1107M - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink).

Y. ASTM D1187/D1187M - Standard Specification for Asphalt-Base Emulsions for Use as Protective Coatings for Metal.

Z. ASTM E488/E488M - Standard Test Methods for Strength of Anchors in Concrete Elements.

AA. ASTM F593 - Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs.

BB. ASTM F594 - Standard Specification for Stainless Steel Nuts.

CC. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination.

DD. AWS B2.1/B2.1M - Specification for Welding Procedure and Performance Qualification.

EE. AWS D1.1/D1.1M - Structural Welding Code-Steel.

FF. AWS D1.3/D1.3M - Structural Welding Code-Sheet Steel.

GG. NAAMM AMP 500 - Metal Finishes Manual.

HH. SSPC-PA 1 - Shop, Field, and Maintenance Painting of Steel.

II. SSPC-SP 3 - Power Tool Cleaning.

JJ. SSPC-SP 6/NACE No. 3 - Commercial Blast Cleaning.

1.3 QUALITY ASSURANCE

A. Fabricator Qualifications: A firm experienced in producing metal fabrications similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

B. Welding:

1. Qualify procedures and personnel according to AWS D1.1 and AWS D1.3.

2. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.

1.4 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

B. Product Data:

1. Materials list of items proposed to be provided under this Section.

2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.

3. Product Data for the Following:

a. Nonslip aggregates and nonslip-aggregate surface finishes.

b. Paint products.

c. Grout.

4. Manufacturer's recommended installation procedures which, when approved by the Architect, will become the basis for accepting or rejecting actual installation procedures used on the Work.

C. Shop Drawings: Detail fabrication and erection of each metal fabrication indicated. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.

1. Provide templates for anchors and bolts specified for installation under other Sections.

1.5 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

1.6 PROJECT CONDITIONS

A. Field Measurements: Where metal fabrications are indicated to fit walls and other construction, verify dimensions by field measurements before fabrication and indicate measurements on shop drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1.7 COORDINATION

A. Coordinate installation of anchorages for metal fabrications.

B. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete.

C. Deliver such items to Project site in time for installation.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. For metal fabrications exposed to view in the completed Work, provide materials with smooth, flat surfaces without blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.

2.2 METALS

A. Steel Plates, Shapes, and Bars: ASTM A36.

B. Cold-Rolled Carbon Steel Sheets: ASTM A336.

C. Galvanized Carbon Steel Sheets: G90 zinc coating in accordance with ASTM A653.

D. Steel Plates to be Bent or Cold-Formed: ASTM A283, grade C.

E. Steel Bars and Bar-Size Shapes: ASTM A663, or ASTM A36.

F. Cold-Finished Steel Bars: ASTM A108.

G. Steel Tubing (hot-formed, welded and seamless): ASTM A501.

H. Steel Tubing (cold-formed, welded and seamless): ASTM A500 or ASTM A36.

I. Steel Pipe: ASTM A53, Grade A, Schedule 40, black finish unless otherwise noted.

J. Malleable-Iron Castings: ASTM A47, Grade 32510.

K. Gray Iron Castings: ASTM A48, class 10.

L. Aluminum Extrusions: ASTM B221, alloy 6063-T6.

M. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy to be welded.

N. Cast-in-Place Anchors in Concrete: Anchors of type indicated below, fabricated from corrosion-resistant materials capable of sustaining, without failure, the load imposed within a safety factor of 4, as determined by testing per ASTM E488, conducted by a qualified independent testing agency.

1. Threaded or wedge type galvanized ferrous castings, either ASTM A47 malleable iron or ASTM A27/A27M cast steel. Provide bolts, washers, and shims as needed, hot-dip galvanized per ASTM A153/A153M.

2.3 FASTENERS

A. General: Provide Type 304 or 316 stainless-steel fasteners for exterior use and zinc-plated fasteners with coating complying with ASTM B633, Class Fe/Zn 5, where built into exterior walls. Select fasteners for type, grade, and class required.

B. Bolts and Nuts: Regular hexagon-head bolts, ASTM A307, Grade A; with hex nuts, ASTM A563; and, where indicated, flat washers.

C. Lag Bolts: Provide square-head type complying with ASME B18.2.1.

D. Machine Screws: Comply with ASME B18.6.3.

E. Wood Screws: Flat head, carbon steel, ASME B18.6.1.

F. Toggle Bolts: Tumble-wing type, class, and style as needed.

G. Plain Washers: Round, carbon steel, ASME B18.21.1.

H. Lock Washers: Lock Washers: Helical, spring type, carbon steel, ASME B18.21.1.

I. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to four times the load imposed when installed in concrete, as determined by testing per ASTM E488, conducted by a qualified independent testing agency.

1. Carbon-steel components zinc-plated to comply with ASTM B633, Class Fe/Zn 5.

2. Alloy Group 1 or 2 stainless-steel bolts complying with ASTM F593 and nuts complying with ASTM F594.

2.4 PAINT

A. Shop Primers: Provide primers that comply with Section 09 90 00 - Painting and Coating.

B. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D1187.

C. For repair of galvanizing, use a high zinc-dust content paint.

2.5 GROUT

A. Nonshrink, Metallic Grout: Factory-packaged, ferrous-aggregate grout complying with ASTM C1107, specifically recommended by manufacturer for heavy-duty loading applications.

2.6 CONCRETE FILL

A. Concrete Materials and Properties: Comply with requirements on Structural Drawings for normal-weight, air-entrained, ready-mix concrete with a minimum 28-day compressive strength of 3000 psi, unless otherwise indicated.

2.7 OTHER MATERIALS

A. Steel channel and angle frames for doors, duct openings, scuttles, mechanical equipment, louvers, and other frames as shown and detailed of structural shapes shall be neatly fabricated to the exact size required and in accordance with approved shop drawing. Corners shall be neatly joined, welded and ground smooth. Concealed anchors for securing to concrete shall be welded on the back. Bar stops shall be secured to frames with countersunk flathead screws or plug welded from the back. Wherever required, steel frames shall be prepared to receive the necessary hardware. Where mechanical equipment such as fans, blowers, etc., and sheet metal are shown or specified to be attached to steel frames, the drilling, tapping, and attachment will be performed by trade involved.

B. Curb angles, corner guards, bumpers, etc. shall be of the sizes and shapes called for and provided with anchors welded to the backs and shall be of the sizes and spacing shown.

C. Steel Pipe Bollards: Fabricate from Schedule 80 steel pipe and install in the dimensions indicated below and on the Drawings.

D. Vertical Steel Ladders: Comply with ANSI A14.3, unless otherwise indicated.

1. Provide 11 rung modular bracket mounted steel fixed wall ladder comprising of heavy duty sub-assemblies with no section greater than 7' in length; Cotterman M11W, or equal.

2. Walk-thru handrails shall be welded assemblies and shall not be attached to building roof.

3. Provide hot-dip galvanizing for steel ladder.

4. Provide nonslip surfaces on top of each rung, either by coating rung with aluminum-oxide granules set in epoxy-resin adhesive or by using a type of manufactured rung filled with aluminum-oxide grout.

E. Provide other materials, not specifically described but required for a complete and proper installation, subject to the approval of the Architect.

2.8 FABRICATION

A. Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

B. Except as otherwise shown on the Drawings or the approved shop drawings, use materials of size, thickness, and type required to produce reasonable strength and durability in the work of this Section.

C. Shear and punch metals cleanly and accurately. Remove burrs.

D. Ease exposed edges to a radius of approximately 1/32 inch, unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

E. Weld corners and seams continuously to comply with the following:

5. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.

6. Obtain fusion without undercut or overlap.

7. Remove welding flux immediately.

8. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

F. Provide for anchorage of type indicated; coordinate with supporting structure. Fabricate and space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.

G. Fabricate joints that will be exposed to weather in a manner to exclude water, or provide weep holes where water may accumulate.

H. Remove sharp or rough areas on exposed traffic surfaces.

I. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts. Locate joints where least conspicuous.

J. Prior to shop painting or priming, properly clean metal surfaces as required for the applied finish and for the proposed use of the item.

K. On surfaces inaccessible after assembly or erection, apply two coats of the specified primer. Change color of second coat to distinguish it from the first.

2.9 FINISHING

A. Comply with NAAMM's "Metal Finishes Manual" for recommendations for applying and designating finishes.

B. Finish metal fabrications after assembly.

C. Steel and Iron Finishes:

1. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with minimum requirements indicated below for SSPC surface-preparation specifications and environmental exposure conditions of installed metal fabrications:

a. Exteriors (SSPC Zone 1B): SSPC-SP 6/NACE No. 3.

b. Interiors (SSPC Zone 1A): SSPC-SP 3.

2. Apply shop primer to uncoated surfaces of metal fabrications, except those with galvanized finishes and those to be embedded in concrete or sprayed-on fireproofing, unless otherwise indicated. Comply with SSPC-PA 1 for shop painting.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 COORDINATION

A. Coordinate as required with other trades to assure proper and adequate provision in the work of those trades for interface with the work of this Section.

3.3 INSTALLATION

A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing metal fabrications to in-place construction. Include threaded fasteners for concrete inserts, toggle bolts, through-bolts, lag bolts, wood screws, and other connectors.

B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

C. Provide temporary bracing or anchors in formwork for items that are to be built into concrete or similar construction.

D. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.

E. Field Welding: Comply with the following requirements.

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.

2. Obtain fusion without undercut or overlap.

3. Remove welding flux immediately.

4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

F. Corrosion Protection: Coat concealed surfaces of aluminum that will come into contact with grout, concrete, wood, or dissimilar metals with a heavy coat of bituminous paint.

G. Immediately after erection, clean the field welds, bolted connections, and abraded areas of shop priming. Paint the exposed areas with same material used for shop priming.

H. Installing Pipe Bollards: Anchor bollards in place with concrete footings. Support and brace bollards in position in footing excavations until concrete has been placed and cured. Fill bollards solidly with concrete, mounding top surface.

3.4 MISCELLANEOUS ITEMS

A. With exceptions as specified, furnish, fabricate, and install all miscellaneous angles, channels, bent plate, clips, anchors, and other miscellaneous metal work required for the complete job as indicated on the Drawings. Such items shall be

formed as detailed or if not detailed, as required for the location and purposes served, and in accordance with the applicable provisions specified herein. Furnish and install all 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 the Drawings.

B. Among other miscellaneous items, the work shall include the furnishing and installation of light steel structural items not noted on the Structural Drawings, but which are shown on the Architectural Drawings.

C. Sleeves through concrete walls and footings shall be furnished and installed, as required, and shall be standard weight steel sections of size sufficient to allow 1/4" clearance all around between the sleeve and item to be inserted. Pipe sleeves in connection with mechanical and electrical work are included in the respective Mechanical and Electrical Drawings.

D. Anchors, brackets, and plates of suitable steel shall be furnished and installed where required in connection with steel, iron and concrete construction, and shall be complete in all respects.

3.5 CLEANING

A. Cleaning and touch-up painting of field welds, bolted connections and abraded areas of the shop paint on miscellaneous metal is specified in Section 09 90 00 - Painting and Coating.

B. Galvanized Surfaces: Clean welds, bolted connections and abraded areas and apply galvanizing repair paint to comply with ASTM A780.

END OF SECTION

SECTION 05 52 13

PIPE AND TUBE RAILINGS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide galvanized steel pipe handrails, guardrails and fittings as shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

B. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Structural Drawings: Cast-in-Place Concrete - Concrete to receive the recessed floor mounting receptor.

2. Section 05 50 00: Metal Fabrications - Requirements for anchors to concrete and steel construction; grout for anchoring railing posts.

3. Section 07 92 00: Joint Sealants - Sealant and joint backing materials.

4. Section 09 24 23: Cement Stucco.

5. Section 09 90 00: Painting and Coating - Field painting.

1.2 REFERENCES

A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.

B. ASTM A47/A47M - Standard Specification for Ferritic Malleable Iron Castings.

C. ASTM A48/A48M - Standard Specification for Gray Iron Castings.

D. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.

E. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.

F. ASTM A501/A501M - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.

G. ASTM A663/A663M - Standard Specification for Steel Bars, Carbon, Merchant Quality, Mechanical Properties.

H. ASTM A780/A780M - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings.

I. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination.

J. AWS B2.1/B2.1M - Specification for Welding Procedure and Performance Qualification.

K. AWS D1.1/D1.1M - Structural Welding Code-Steel.

1.3 QUALITY ASSURANCE

A. Fabricator Qualifications: Firm experienced in successfully producing pipe and tube railing fabrications similar to that indicated for this Project, with sufficient production capacity to produce required units without caused delay in the Work.

B. Installer Qualifications: Arrange for installation of railings specified in this Section by same firm that fabricated them.

C. Welding Standards: Qualify welders and perform welding in compliance with applicable provisions of AWS D1.1. Certify that each welder has AWS qualification within the previous 12 months.

D. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in the State of California and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for the design of handrails and railings that are similar to those indicated for this Project in material, design, and extent.

E. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

1.4 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

B. Product Data: All standard production products.

C. Shop Drawings: Indicate fabrication and installation of handrails and railing systems.

1. Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories.

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

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

D. Qualification Data: For firms and persons specified in Article 1.3 to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

1. Welder Certificates signed by Contractor certifying that welders comply with requirements specified in Article 1.3.

2. For installed handrails and railings indicated to comply with design loads, include structural calculations signed and sealed by a qualified professional structural engineer registered to practice in the State of California, who was responsible for their preparation.

1.5 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

B. Deliver materials to the Job Site in good condition and store products in enclosed, well-ventilated spaces, not in contact with soil or vegetation and not subject to inclement weather.

1.6 PROJECT CONDITIONS

A. Verify actual locations of railings and other construction to which railings must fit by accurate field measurements before fabrication. Immediately report variances in writing to Architect. Show recorded measurements on final shop drawings.

B. Coordinate fabrication schedule with construction progress to avoid delay of Work.

C. Field Inspection of Fabricated Products: Prior to installation, inspect products for damage and verify markings and dimensions against reviewed submittals.

1.7 COORDINATION AND SCHEDULING

A. Coordinate installation of anchorages for handrails and railings. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete. Deliver such items to Project Site in time for installation.

B. Schedule installation so handrails and railings are mounted only on completed walls. Do not support temporarily by any means that does not satisfy structural performance requirements.

PART 2 - PRODUCTS

2.1 STEEL RAILING SYSTEM

A. Exterior Handrails: 1-1/2” pipe rail system, painted. Provide design style as shown on the Drawings.

1. Exterior railings, including tubing, pipe, fittings, brackets, fasteners and other ferrous metal components where indicated on the Drawings, shall be galvanized.

B. Steel Tubing, Hot Formed: Welded or Seamless, ASTM A501.

C. Steel Tubing, Cold Formed: ASTM A500, Grade A, unless another grade is required by structural loads.

D. Steel Pipe: ASTM A53 Grade A, Schedule 40 seamless or welded.

E. Steel Plates, Shapes, and Bars: ASTM A663/A663M or ASTM A36/A36M.

F. Iron Castings: Gray iron complying with ASTM A48, Class 30 or higher, soft gray iron.

G. Iron Castings: Malleable iron complying with ASTM A47, Grade 32510.

H. Posts and Intermediate Rails: Steel tubing or pipe; welded joints.

I. Fittings: Elbows, T-shapes, wall brackets, escutcheons; cast or machined steel.

2.2 WELDING MATERIALS, FASTENERS, AND ANCHORS AND MOUNTING

A. Welding Electrodes and Filler Metal: Provide type and alloy of filler metal and electrodes as recommended by producer of metal to be welded and as required for color match, strength, and compatibility in fabricated items.

B. Fasteners: Refer to Section 05 50 00.

1. Fasteners for Anchoring Handrails and Railings to Other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring handrails and railings to other types of construction indicated and capable of withstanding design loads.

2. Fasteners for Interconnecting Handrail and Railing Components:

a. Do not use metals that are corrosive or incompatible with materials joined.

b. Provide concealed fasteners, unless exposed fasteners are unavoidable or are the standard fastening method for handrails and railings indicated.

c. Exposed Fasteners: Flush countersunk screws or bolts, consistent with design of railing.

C. Anchors: Refer to Section 05 50 00.

D. Brackets and Flanges: Cast or formed metal of same type of material and finish as supported rails, unless otherwise indicated, with steel inserts for casting in concrete. Prepare backing plate for mounting in stud wall construction.

2.3 GROUT AND ANCHORING CEMENT

A. Nonshrink, Nonmetallic Grout: Refer to Section 05 50 00.

B. Erosion-Resistant Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound. Provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating and that is recommended by manufacturer for exterior use.

2.4 PAINT

A. Shop Primers: Comply with applicable requirements in Section 09 90 00.

2.8 FABRICATION

A. Fit and shop assemble components in largest practical sizes for delivery to Site.

B. Fabricate components with joints tightly fitted and secured. Provide spigots and sleeves to accommodate site assembly and installation.

C. Form simple and compound curves by bending pipe in jigs to produce uniform curvature for each repetitive configuration required; maintain cylindrical cross-section of pipe throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of pipe.

D. Provide anchors, plates, angles, or other components required for connecting railings to structure.

E. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.

F. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

G. Exterior Components: Continuously seal joined pieces by continuous welds. Drill condensate drainage holes at bottom of members at locations that will not encourage water intrusion.

H. Interior Components: Continuously seal joined pieces by continuous welds.

I. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

J. Provide wall returns at ends of wall-mounted handrails, unless otherwise indicated.

K. Close exposed ends of pipe by welding 3/16 inch thick steel plate in place or by use of prefabricated fittings, except where clearance of end of pipe and adjoining wall surface is 1/4 inch or less.

L. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, end closures, flanges, miscellaneous fittings, and anchors for interconnections of pipe and attachment of railings and handrails to other work. Furnish inserts and other anchorage devices for connecting railing and handrails to concrete work.

M. Fillers: Provide steel sheet or plate fillers of thickness and size indicated or required to support structural loads of handrails where needed to transfer wall bracket loads through wall finishes to structural supports. Size fillers to suit wall finish thicknesses. Size fillers to produce adequate bearing to prevent bracket rotation and overstressing of substrate.

N. For railing posts set in concrete fabricate sleeves from steel pipe not less than 6 inches long with an inside diameter not less than 1/2 inch greater than the outside diameter of post, with steel plate closure welded to bottom of sleeve.

O. For exterior steel railings and handrails formed from steel pipe with galvanized finish, galvanize fittings, brackets, fasteners, sleeves, and other ferrous components.

P. Accommodate for expansion and contraction of members and building movement without damage to connections or members.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

B. Examine plaster, where reinforced to receive anchors, to verify that locations of concealed reinforcements have been clearly marked for Installer. Locate reinforcements and mark locations if not already done.

3.2 PREPARATION

A. Clean and strip primed steel items to bare metal where site welding is required.

B. Supply items required to be cast into concrete with setting templates.

C. Coordinate with Sections 05 50 00.

3.3 INSTALLATION

A. Install components plumb and level, accurately fitted, free from distortion or defects.

B. Anchor railings to structure with anchors, plates, angles, or other appropriate components as detailed on shop drawings.

1. Anchor posts in concrete by means of pipe sleeves preset and anchored into concrete. After posts have been inserted into sleeves, fill annular space between post and sleeve solid with nonshrink, nonmetallic grout.

2. Leave anchorage joint exposed, wipe off surplus anchoring material, and leave 1/8 inch build-up, sloped away from post. For installations exposed on exterior, or to flow of water, seal anchoring material to comply with grout manufacturer's directions.

3. Anchor rail ends into concrete with steel round flanges welded to rail ends and anchored into wall construction with lead expansion shields and bolts.

C. Field weld anchors as indicated on shop drawings. Touch-up welds with primer. Grind welds smooth.

D. Conceal bolts and screws whenever possible. Where not concealed, use flush countersunk fastenings.

E. Assemble with spigots and sleeves to accommodate tight joints and secure installation.

F. Finishing:

1. Provide any exposed fasteners with finish matching appearance, including color and texture, of handrails and railings.

2. Field Painting of Exterior Railings: Refer to Section 09 90 00.

3.4 ERECTION TOLERANCES

A. Maximum Variation from Plumb: 1/4 inch per story, non-cumulative.

B. Maximum Offset from True Alignment: 1/4 inch.

C. Maximum Out-of-Position: 1/4 inch.

3.5 ADJUSTING AND CLEANING

A. For galvanized surfaces clean welds, bolted connections and abraded areas, and apply galvanizing repair paint to comply with ASTM A780.

END OF SECTION

SECTION 05 58 00

FORMED METAL FABRICATIONS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide formed metal fabrications where shown on the Drawings, as specified herein, and as needed for a complete and proper installation including the following.

1. Stainless steel counters at kitchens.

2. Stainless steel kitchen sink integral with kitchen counter.

B. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Section 06 40 00: Architectural Woodwork.

1.2 REFERENCES

A. AISI - American Iron and Steel Institute.

1.3 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1. Provide stainless steel work fabricated and installed by a shop with a minimum five (5) years experience in similar work.

1.4 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

B. Product Data: Submit materials list, manufacturer's specifications and other data, and Shop Drawings in sufficient detail to show fabrication, installation, anchorage, and interface of the work of this Section with the work of adjacent trades.

C. Submit samples of exposed finishes, minimum 8" square, for Architect's approval.

1.5 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

B. Deliver materials to the Job Site in good condition and store products in enclosed, well-ventilated spaces, not in contact with soil or vegetation and not subject to inclement weather.

1.6 COORDINATION

A. Coordinate with other trades as required for a timely and smooth execution of work.

B. Verify all dimensions for proper fit and attachment of all parts.

1.7 GUARANTEE

A. Submit manufacturer's standard warranties and guarantees in addition to formed metal subcontractor's standard guarantee.

PART 2 - PRODUCTS

2.1 STAINLESS STEEL COUNTERS AND SINK

A. Stainless Steel: AISI Type 304, hardest workable temper, No. 4 satin finish.

B. Stainless Steel Counter and Splash:

1. Welding: All shop and field welds shall be continuous and hidden or ground smooth. Exposed welds shall be polished to original finish after grinding with no visible weld lines or buckles. All tops shall be welded into one integral piece.

2. Sink Compartment:

a. Sink tops, bowls, drainboards and countertops shall be manufactured of 16 US standard gauge stainless steel Type 304.

b. All sinks shall be deep drawn manufacturer's standard sizes or special sizes to be welded seamless. Sink bowls shall have 1-1/2" minimum radius coves at vertical and horizontal corners and a 1/2" radius where bowl joins deck. Sink bowls shall be 19" x 16" x 10" and 19" x 16" x 10" with outlets for garbage disposer and drain specified on the Plumbing Drawings, and ledge for faucets as required for sink trim as specified.

3. Drainboards, rims and backs made integral of one sheet of metal. Where deck meets backsplash, there shall be a 1/2" radius cove and at junction of backaplash and endsplash cove shall be 1/2" radius. Sink bowls welded integral to drainboards, presenting flush integral seams. No overlapping or soldered edges permitted. Raised rim 1/4" high by 3/4" wide shall be provided at the front and ends of all drainboards and counter tops. Drainboards shall have a depressed fan shaped area sloping approximately 1/4" in 18" to sink bowl insuring positive drainage.

4. Tops shall be 1-1/2" thick with a 1/2" wide return flange at bottom. Backsplashes and endsplashes shall be 1" thick with a 1/2" flange turned down at the wall. "Z" clips shall be provided for attaching backsplash to wall. Provide no-drip marine edge at all countertops.

5. The entire underside of the top shall be reinforced and bonded with heavy 14 gauge steel channels, 4" webb with 3/4" legs. No weld dimples permitted on top surface of stainless steel. Attachments to cabinets shall be provided by wood strips and corner blocks. All stainless steel tops shall be heli-arc butt-fuse welded. All welds shall be ground and polished to invisibility. No soldered seams or lap joints permitted.

6. One piece welded construction is desirable; a "LAMI-WELD" joint shall be fused in the field, ground and polished to invisibility, free of warpage and distortions.

7. All undersurfaces shall be coated with heat-resistant underseal for sound deadening and insulation from condensation. Coat with minimum 1/16" thick approved hard-drying mastic material. Spray onto surface after attachment sections are fastened to top. Completely cover and seal.

8. Polish all exposed surfaces to a #4 Satin Finish.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine the areas and conditions under which this work will be performed. Inspect the location of the stainless steel counter work to verify job conditions and dimensions. Do not proceed with fabrication and installation until unsatisfactory dimensions and conditions have been corrected in a manner acceptable to the installer.

3.2 INSTALLATION

A. Coordinate with electrical work and provide openings for all outlets and junction boxes.

B. Set units plumb and true, anchored securely to adjoining work and supporting substrate. Adjust to a level tolerance of 1/16" per ft. maximum variation from level.

C. After completion of installation, clean all surfaces, internally and externally. Restore exposed finishes to remove abrasions and other damages. Polish exposed surfaces. Replace work which cannot be successfully restored.

3.3 CLEANUP

A. Broom clean and remove from the Site all scraps and debris from this work.

END OF SECTION

SECTION 06 10 00

ROUGH CARPENTRY

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide and install wood framing, sheathing, furring and other rough carpentry as indicated on the Drawings, specified herein, and as needed for a complete and proper installation.

B. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Section 06 20 00: Finish Carpentry.

2. Section 06 40 00: Architectural Woodwork.

1.2 REFERENCES

A. APA (The Engineered Wood Association) - Engineered Wood Construction Guide.

B. ASME B18.2.1 - Square, Hex, Heavy Hex, and Askew Head Bolts and Hex, Heavy Hex, Hex Flange, Lobed Head, and Lag Screws (Inch Series).

C. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.

D. ASTM A307 Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60,000 PSI Tensile Strength.

E. ASTM F1667 - Standard Specification for Driven Fasteners: Nails, Spikes, and Staples

F. AWPA T1 - Use Category System: Processing and Treatment Standard.

G. C.B.C. (California Building Code) 2019 Edition.

H. FS UU-B-790A - Building Paper, Vegetable Fiber: (Kraft, Waterproofed, Water Repellent, and Fire Resistant).

I. PS 1-95 - Voluntary Product Standard for Construction and Industrial Plywood.

J. Redwood Inspection Service - Standard Specifications for Grades of California Redwood Lumber.

K. WCLIB - West Coast Lumber Inspection Bureau.

L. WWPA - (Western Wood Products Association) Western Lumber Product Use Manual.

1.3 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Codes and Standards: In addition to complying with pertinent codes and regulations of governmental agencies having jurisdiction, unless otherwise specifically directed or permitted by the Architect, comply with the following.

1. "Western Lumber Product Use Manual" of the WWPA for selection and use of products included in that manual.

2. "Engineered Wood Construction Guide" of the APA.

3. "Standard Specifications for Grades of California Redwood Lumber" of the Redwood Inspection Service, when Redwood is used.

1.4 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

1.5 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

B. Protection: Carefully pile lumber off the ground. Cover all materials and protect from weather.

PART 2 - PRODUCTS

2.1 GRADE STAMPS

A. Identify framing lumber by the grade stamp of the WCLIB, or such other grade stamp as is approved in advance by the Architect.

B. Identify plywood as to species, grade, and glue type by the stamp of the APA.

2.2 MATERIALS

A. Provide materials in the quantities needed for meeting or exceeding the standards of quality shown on the Structural Drawings.

1. Minimum Lumber Grades and stress grades noted on Structural Drawings.

2. All Sill Plates Bearing on Concrete or Masonry: Pressure treated Douglas Fir.

3. Plywood: Standard sheathing with exterior glue. PS 1-95 with factory grading mark, as noted on Drawings.

4. Wood Preservative:

   a. Preservative chemicals acceptable to authorities having jurisdiction and containing no arsenic or chromium.

   b. Preservative Treatment by Pressure Process: AWPA T1, except that lumber that is not in contact with the ground and is continuously protected from liquid water may be treated according to AWPA T1 with inorganic boron (SBX).

5. Rough Hardware:

   a. Steel Items:

      1) Comply with ASTM A36.

      2) Use galvanized at exterior locations.

   b. Machine Bolts: Comply with ASTM A307.

   c. Lag Bolts: Comply with ASME B18.2.1.

   d. Nails:

      1) Use common except as otherwise noted.

      2) Comply with ASTM F1667.

      3) Use galvanized at exterior locations.

6. Building Paper: Kraft paper complying with Federal Specification UU-790A.

2.3 OTHER MATERIALS

A. Provide other materials, not specifically described but required for a complete and proper installation, subject to the approval of the Architect.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

3.2 WORKMANSHIP

A. Carefully lay out, fit, and erect all framing plumb and level.

B. Produce joints which are tight, true, and well nailed, with members assembled in accordance with the Drawings and with pertinent codes and regulations.

3.3 GENERAL FRAMING

A. General:

1. In addition to framing operations normal to the fabrication and erection indicated on the Drawings, install all wood blocking, backing, and framing required for the work of other trades.

2. Bearing studs may be notched to a depth not exceeding 1/4 its width but no closer than 5/8" to the edge of the stud.

3. Non-bearing studs may be notched to a depth not exceeding 40% of its width of bored to 60% of its width but not closer than 5/8" to the edge of the stud.

B. Bracing:

1. Brace all walls not solidly sheathed with 1 x 6 diagonal bracing at each end and at 25 feet on center per C.B.C.

2. Adequately brace structure as erection progresses.

3.4 BLOCKING

A. Install blocking as required to support items of finish and to cut off concealed draft openings, both vertical and horizontal, between all ceiling and floor areas.

B. Install solid blocking between joists at points of support and wherever sheathing is discontinuous. Blocking may be omitted where joists are supported on metal hangers.

3.5 ALIGNMENT

A. On framing members to receive a finished surface, align the finish subsurface to vary not more than 1/8" from the plane of surfaces of adjacent furring and framing members.

3.6 INSTALLATION OF PLYWOOD SHEATHING

A. Placement: Place plywood with face grain perpendicular to supports and continuously over at least two supports, except where otherwise shown on the Drawings.

3.7 FASTENING

A. Nailing:

1. Use only common wire nails or spikes of the dimension shown on the nailing schedule, except where otherwise specifically noted on the Drawings.

2. Use untreated steel nails for interior work and concealed framing, and galvanized nails for all exposed exterior work.

3. Use nails long enough to penetrate at least one-half thickness of material.

4. Remove split members and replace with members complying with the specified requirements.

B. Bolts and Screws:

1. Drill holes 1/16" larger in diameter than the bolts being used.

2. Drill straight and true from one side only.

3. For lag screws and wood screws, prebore holes same diameter as root of threads, enlarging holes to shank diameter for length of shank.

4. Screw, do not drive, lag screws and wood screws.

3.8 NAILING SCHEDULE

A. Unless otherwise directed by the Structural Drawings, comply with the nailing schedule and other fastening requirements contained in the pertinent regulations of governmental agencies having jurisdiction.

3.9 CLEANUP

A. Broom clean inside and out, removing from the Site all scraps and other debris left or caused by this work.

END OF SECTION

SECTION 06 20 00

FINISH CARPENTRY

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Install wood trim and other items not specifically described as being installed under other Sections of these Specifications.

B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Section 06 10 00: Rough Carpentry.

2. Section 06 40 00: Architectural Woodwork.

3. Section 09 90 00: Painting and Coating.

1.2 REFERENCES

A. NAAWS 4.0 - North American Architectural Woodwork Standards.

B. WWPA - (Western Wood Products Association) Western Lumber Product Use Manual.

1.3 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. The following standards shall apply to the work of this Section, except where more stringent requirements are specified herein:

1. NAAWS 4.0.

2. Western Lumber Product Use Manual.

C. Provide kiln dried lumber for all finish carpentry.

1.4 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

1.5 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Exposed Hardwood: Natural white maple, stained and finished per Architect.

2.2 OTHER MATERIALS

A. Glue: Aliphatic-resin, polyurethane, or resorcinol wood glue recommended by manufacturer for general carpentry use.

B. Provide other materials, not specifically described but required for a complete and proper installation, subject to the approval of the Architect.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 MEASUREMENTS

A. Verify all dimensions by taking field measurements as required.

3.3 WORKMANSHIP

A. Produce joints which are true, tight, and well nailed with all members assembled in accordance with the Drawings.

B. Jointing:

1. Make joints to conceal shrinkage; miter exterior joints; cope interior joints; miter or scarf end-to-end joints.

2. Install trim in pieces as long as possible, jointing only where solid support is obtained.

C. Fastening:

1. Install items straight, true, level, plumb, and firmly anchored in place.

2. Where blocking or backing is required, coordinate as necessary with other trades to ensure placement of required backing and blocking in a timely manner.

3. Nail trim with finish nails of proper dimension to hold the member firmly in place without splitting the wood.

4. On exposed work, set nails for putty.

5. Screw, do not drive, wood screws; except that screws may be started by driving and then screwed home.

3.4 INSTALLATION OF OTHER ITEMS

A. Install items in strict accordance with the Drawings, and the recommended methods of the manufacturer as approved by the Architect, anchoring firmly into position at the prescribed location, straight, plumb, and level.

3.5 FINISHING

A. Sandpaper finished wood surfaces thoroughly as required to produce a uniformly smooth surface, always sanding in the direction of the grain; except do not sand wood which is designed to be left rough.

B. No coarse grained sandpaper mark, hammer mark, or other imperfection will be accepted.

C. Prepare all woodwork installed hereunder by cleaning and sanding as required to receive finishes specified in Section 09 90 00 - Painting and Coating.

3.6 CLEANING UP

A. Keep the premises in a neat, safe, and orderly condition at all times during execution of this portion of the Work, free from accumulation of sawdust, cut-ends, and debris.

B. Sweeping:

1. At the end of each working day, and more often if necessary, thoroughly sweep surfaces where refuse from this portion of the Work has settled.

2. Remove the refuse to the area of the job site set aside for its storage.

3. Upon completion of this portion of the Work, thoroughly broom clean all surfaces.

END OF SECTION

SECTION 06 40 00

ARCHITECTURAL WOODWORK

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide architectural woodwork where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Section 05 58 00: Formed Metal Fabrications.

2. Section 09 90 00: Painting and Coating.

1.2 REFERENCES

A. NAAWS 4.0 - North American Architectural Woodwork Standards.

1.3 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Codes and Standards:

1. In addition to complying with pertinent codes and regulations of governmental agencies having jurisdiction, comply with NAAWS 4.0 of the Woodwork Institute for the grades specified.

a. If provisions of the grade specified are in conflict with, or modified by the Drawings and/or Specifications, the modifications shall govern.

2. Before delivery to the Jobsite the millwork supplier shall provide a Woodwork Institute Certified Compliance Certificate indicating the millwork products being supplied for this Project, and certifying that these products fully meet all the requirements of the grade or grades specified.

3. After installation is complete the millwork supplier shall provide a Woodwork Institute Certified Compliance Certificate indicating and certifying that the installation of the provided products fully meets all the requirements of the grade or grades specified.

4. Each elevation of casework and each laminated plastic top and each solid surface top shall bear a Woodwork Institute Certified Compliance Label.

1.4 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

B. Product Data:

1. Materials list of items proposed to be provided under this Section.

2. Shop Drawings in sufficient detail to show fabrication, installation, anchorage, and interface of the work of this Section with the work of adjacent trades. Provide a Woodwork Institute Certified Compliance Label on the first page of the shop drawings.

3. Samples of the proposed materials.

1.5 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

B. Comply with Section 13 of NAAWS 4.0 of the Woodwork Institute.

PART 2 - PRODUCTS

2.1 GENERAL

A. Fabricate architectural woodwork to "custom grade" standards of the Woodwork Institute NAAWS 4.0. Cabinets shall be Type I multiple self-supporting units, modular casework, Type A frameless flush overlay door and drawer front construction.

B. Finishing: Mill finish architectural woodwork in accordance with pertinent provisions of Section 09 90 00 of these Specifications. Comply with Woodwork Institute NAAWS 4.0 Section 5 requirements.

2.2 CASEWORK

A. Shop fabricate casework as shown on the Drawings.

B. Provide Formica laminated plastic or equal, for cabinet and shelving faces, drawer fronts, and exposed ends, including both sides of doors and all exposed edges. Color and pattern as approved by Architect. Comply with Woodwork Institute NAAWS 4.0 Section 10 requirements.

C. Install the finish hardware selected by the Architect.

D. Gaps between doors, drawers, and false fronts shall be equal throughout each elevation, and shall not exceed 1/8”.

2.3 COUNTER TOPS

A. Types and Sizes: Shop fabricate counter tops and splashes to the types and dimensions shown on the Drawings.

B. Bathroom Counter Tops and Splashes: Formica Solid Surface or equal by Corian, in colors and patterns selected by the Architect from standard colors and patterns of the approved manufacturer. Verify sink installation.

1. Solid-Surfacing-Material Thickness: As indicated on Drawings.

2. Where splashes are called for, provide 4" high coved splash and no-drip leading edge.

C. Kitchen Counter, Splash and Sink: Integral stainless steel. Refer to Section 05 58 00 and Drawings for details.

2.4 OTHER MATERIALS

A. Interior Standing and Running Trim: Wood species and cut as selected by Architect. Comply with Woodwork Institute NAAWS 4.0 Section 6 requirements.

B. Provide other materials and miscellaneous items, not specifically described but required for a complete and proper installation, subject to the approval of the Architect.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 FIELD MEASUREMENTS

A. Take necessary measurements in the field to assure proper dimensions for the work of this Section.

3.3 FABRICATION

A. Fabricate the work of this Section in strict accordance with the approved shop drawings and the referenced standards, anchoring all items firmly into position.

B. Solid Surfacing:

1. Fabricate tops in one piece with shop-applied backsplashes and edges, unless otherwise indicated. Comply with solid-surfacing material manufacturer's written recommendations for adhesives, sealers, fabrication, and finishing.

2. Drill holes in countertops for plumbing fittings in shop.

3.4 INSTALLATION

A. Install the work of this Section in strict accordance with the approved shop drawings and the referenced standards, anchoring all items firmly into position.

3.5 CLEANING UP

A. Keep the premises in a neat, safe, and orderly condition at all times during execution of this portion of the Work, free from accumulation of sawdust, cut-ends, and debris.

B. At the end of each working day, and more often if necessary, thoroughly sweep surfaces where refuse from this portion of the Work has settled.

C. Remove the refuse to the area of the Job Site set aside for its storage.

D. Upon completion of this portion of the Work, thoroughly broom clean all surfaces.

END OF SECTION

SECTION 07 13 53

ELASTOMERIC SHEET WATERPROOFING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide elastomeric waterproofing on planter and retaining walls not part of building walls.

B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Structural Drawings: Cast-in-Place Concrete.

1.2 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1. Installer Qualifications: A firm which has at least three (3) years documented experience in work of the type required by this Section, and is recommended by manufacturer to install the specified products.

2. Manufacturer Qualifications: Elastomeric waterproofing system shall be manufactured by a firm with a minimum of tweenty (20) years experience in the production of elastomeric waterproofing.

B. Pre-Installation Conference and Inspection: After review of submittals but before starting installation of the work of this Section, conduct a meeting at the Project site attended by the City’s Representative, Architect, waterproofing applicator, and a technical representative of the elastomeric waterproofing material manufacturer. The waterproofing applicator and material manufacturer's technical representative shall inspect the substrates to receive work of this Section and report defective conditions to City’s Representative and Architect.

C. Manufacturer's Representative: Provide arrangements necessary to have a trained representative of the manufacturer visit the Project site on a weekly basis during elastomeric waterproofing work to review installation procedures.

1.3 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

B. Product Data: Submit manufacturer's product data including complete installation instructions.

C. Certificates: Submit a certificate stating applicator is certified by the elastomeric waterproofing material manufacturer and, upon completion, submit a certificate stating that elastomeric waterproofing systems have been installed in conformance with reviewed submittals and manufacturer's recommendations.

D. Shop Drawings: Submit shop drawings indicating each condition of the work. Indicate all adjoining work, methods of adhesion, attachment, and related conditions.

E. Samples: Submit samples of elastomeric membrane waterproofing on flat plywood board, approximately 2 ½" x 4" illustrating color and texture.

F. Experience Record: Submit a list of at least five (5) installations on which each of the materials and systems proposed for installation have been in satisfactory service for at least three (3) years.

1.4 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

B. Deliver materials, except bulk material, in manufacturer's unopened containers fully identified with manufacturer's name, trade name, type, class and grade. Each container shall be identified with material name, date of manufacturer and batch number.

C. Store materials in unopened containers. Store above grade and under cover, protect from damage.

1.5 PROJECT CONDITIONS

A. Install suitable impervious type masking to preclude staining of surfaces to remain exposed wherever elastomeric waterproofing abuts or laps on to other finish surfaces, and provide additional protection as necessary to supplement masking; cover entire area of building subject to damage or staining.

B. Protect adjacent work during installation of work of this Section.

C. Install work of this Section, only in dry weather and when temperature of surfaces to receive waterproofing are above 40° F and below 90° F.

D. Do not install any materials when water in any form is present on the surface or if materials are wet.

1.6 WARRANTY

A. Completed installation shall be guaranteed against defects of material for a period of five (5) years from the date of substantial completion of the waterproofing system.

1.7 EXTRA MATERIALS

A. Upon completion of the work of this Section, deliver to the City an extra stock equaling five (5) gallons of each type of waterproofing used in the Work, tightly sealed in unopened containers. Clearly label each container with project name and type of waterproofing.

PART 2 - PRODUCTS

2.1 ELASTOMERIC WATERPROOFING MANUFACTURERS

A. ITW Polymer Sealants North America, 12055 Cutten Road, Houston, TX 77066, (800) 878-7876.

B. Gaco, (800) 331-0196.

C. Or Equal.

2.2 ELASTOMERIC MEMBRANE WATERPROOFING SYSTEM

A. Pacific Polymers Elasto-Deck B.T. System, as a standard of quality, conforming to the following:

1. Application:

a. 60 mils thick - smooth surfaces.

b. 90 mils thick - rough surfaces.

2. Material Types:

a. Type I: For horizontal surfaces.

b. Type II: For vertical surfaces.

2.3 RELATED MATERIALS

A. Sealants: Permathane® SM7120 PU, single-component, moisture-cured sealant manufactured by ITW Sealants North America, or equal.

B. Substrate Primer: Deck-Thane Primer, Elasto-Poxy Primer VOC, or equal.

C. Backer Rod: Closed-cell Polyethylene rod, such as Ethafoam by Dow Chemical.

D. Flashing Tape: Woven glass cloth tape.

E. Protection Course: J-Drain 220, or equal.

F. Cleaning Materials: Acetone.

2.4 OTHER MATERIALS

A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.1 EXAMINATION

A. All surfaces must be clean and free of any oil, dirt, grease, and other contaminants, which will interfere with adhesion of the coatings. Surfaces shall be left broom clean.

B. Concrete:

1. Concrete surfaces shall be trowel finished followed by a light brooming, left free of loose particles, ridges, projections, voids and droppings that would interfere with the application of the coatings.

2. Concrete surfaces shall be water cured in lieu of curing compounds for a minimum of 28 days. If curing compounds are furnished, they shall be compatible with the provided waterproofing system.

C. All substrate conditions and surfaces shall be subject to inspection by the manufacturer and installer. Do not proceed with work until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. All surfaces must be clean and free of any oil, dirt, grease, and other contaminants, which will interfere with adhesion of the coatings.

B. Concrete: All surfaces to receive elastomeric waterproofing system shall be completely cleaned by sandblasting.

C. Cracks and Control Joints:

1. Except for non-moving shrinkage cracks, all other cracks and joints must be sealed with a single component sealant of the same manufacturer as the elastomeric membrane waterproofing and installed in accordance with manufacturer’s recommendations.

2. Large cracks, 1/16” and over, shall be routed out as required by the manufacturer and sealed with an approved elastomeric sealant. Apply sealant to inside area of cracks only. Do not install on concrete deck surfaces.

3. Seal secondary control and expansion joints with sealant and backer rod as recommended in the installation specifications of the elastomeric membrane waterproofing.

3.3 PROTECTION

A. Protect building from damage resulting from spillage, dripping and dropping of materials. Prevent materials from entering and clogging drains and waterways.

B. Protect the work of this Section until Substantial Completion.

3.4 INSTALLATION

A. Install Elastomeric membrane waterproofing in accordance with manufacturer's printed instructions except as hereinafter specified. Coordinate the work so the complete membrane is installed in a continuous operation, and that all areas where installation has started, per coat, are completed the same working day.

B. Elastomeric Membrane Waterproofing - 60 Mils thickness/Smooth Surface Installation:

1. All cracks 1/16” and over shall be routed or saw cut and filled with joint filler of the same manufacturer as the elastomeric membrane waterproofing and installed in accordance with manufacturer’s recommendations.

2. At intersections of membrane and vertical walls, columns, pipes, and other penetrations, caulk a 3/4” fillet bead at the meeting angle using a joint filler of the same manufacturer as the elastomeric membrane waterproofing and installed in accordance with manufacturer’s recommendations.

3. Install the first coat of the elastomeric membrane waterproofing at a rate of 50 square feet per gallon by airless spray, roller, brush, or squeegee in accordance with the manufacturer’s installation procedures for smooth surfaces.

4. After a 24 hour curing period, install a second coat of elastomeric membrane waterproofing at the same 50 square feet per gallon rate to provide a total dry film thickness of 60 mils.

C. Elastomeric Membrane Waterproofing - 90 Mils thickness/Rough Surface Installation:

1. All cracks 1/16” and over shall be routed or sawcut and filled with joint filler of the same manufacturer as the elastomeric membrane waterproofing and installed in accordance with manufacturer’s recommendations.

2. At intersections of membrane and vertical walls, columns, pipes and other penetrations, caulk a 3/4” fillet bead at the meeting angle using a joint filler of the same manufacturer as the elastomeric membrane waterproofing and installed in accordance with manufacturer’s recommendations.

3. Install the first coat of elastomeric membrane waterproofing at a rate of 35 square feet per gallon by airless spray, roller, brush, or squeegee in accordance with the manufacturer's installation procedures for rough surfaces.

4. After a 24 hour curing period, install a second coat of elastomeric membrane waterproofing at the same 35 square feet per gallon rate to provide a total dry film thickness of 90 mils.

3.5 INSPECTION

A. The wet film thickness of each coat shall be checked during application by averaging numerous measurements taken with a film gauge and thickness shall be sufficient that when cured the dry film thickness will be as specified herein.

B. All surfaces coated shall be visibly checked to insure areas have not been missed and all holidays in the film are repaired.

C. All coating work shall be subject to inspection at any time to insure a strict compliance with the manufacturer's recommendations. Test areas shall be cut whenever requested by the manufacturer's technical representative to verify conformance to the Specifications. Any unsatisfactory area shall be remedied by the applicator.

3.6 PROTECTION COURSE

A. Install protection board on cured membrane after testing, without delay, so that the period of exposure shall be minimized.

3.7 CLEAN UP

A. Remove rubbish, debris, and waste materials and legally dispose of off the Project Site.

END OF SECTION

SECTION 07 21 16

BLANKET INSULATION

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide building insulation where shown on the Drawings, as specified herein, and as needed for a complete and proper installation including, but not necessarily limited to the following.

1. Thermal Insulation for concealed building insulation in floor joists, wall studs, rafter spaces and elsewhere as indicated.

2. Sound attenuation insulation for sound control within interior wall partitions, restroom and elsewhere as indicated.

B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Section 06 10 00: Rough Carpentry.

2. Section 07 52 16.12: Hot-Mopped Styrene-Butadiene-Styrene Modified Bituminous Membrane Roofing.

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

4. Section 09 21 16: Gypsum Board Assemblies.

1.2 REFERENCES

A. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.

B. ASTM C1320 - Standard Practice for Installation of Mineral Fiber Batt and Blanket Thermal Insulation for Light Frame Construction.

C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

D. ASTM E136 - Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750° C.

E. UL - Underwriters Laboratories Inc.

1.3 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the

specified requirements and the methods needed for proper performance of the work of this Section.

1. Installers: Trained applicators approved by manufacturer.

B. Upon completion of this portion of the work, complete and post a certificate of insulation compliance in accordance with pertinent requirements of governmental agencies having jurisdiction.

1.4 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

B. Product Data: Provide data on product characteristics, performance criteria, and limitations.

C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

1.5 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

B. Protect insulation materials from physical damage and from deterioration by moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.

PART 2 - PRODUCTS

2.1 GENERAL

A. Manufacturer: Johns-Manville International, Inc. (JM), 717 17th Street, Denver, CO, U.S., 80202, Tel (800) 654-3103, Fax (303) 978-2318, www.jm.com, or equal.

2.2 MATERIALS

A. Batt Insulation: Refer to Drawings for thicknesses and R-values.

1. Formaldehyde-Free Foil Faced Glass-Fiber Batt Insulation: Formaldehyde-Free Foil Faced Batts; ASTM C665, Type III, Class B, Category 1 with maximum flame-spread and smoke-developed indices of 75 and 450, respectively.

2. Fire-Rated Sound Attenuation Insulation: ASTM C665, Type I, with a glass fiber mat septum for one (1) hour rated partitions; non-faced glass fiber acoustical insulation, panel width to fit stud and truss spaces by thickness indicated on Drawings, UL labeled, fire hazard classification of 25/50 or less when tested in accordance with ASTM E84.

3. Sound Attenuation Insulation: ASTM C665, Type I and ASTM E136; non-faced glass fiber acoustical insulation, panel width to fit stud and truss spaces by thickness indicated on Drawings, surface burning characteristics complying with ASTM E84.

B. Other Materials: Provide other materials, not specifically described but required for complete and proper installation, subject to the approval of the Architect.

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

B. Remove, or protect against, projections in construction framing which may damage or prevent proper insulation.

3.2 INSTALLATION, GENERAL

A. Install the work of this Section in strict accordance with the original design, requirements of governmental agencies having jurisdiction, and the manufacturer's recommended installation procedure, anchoring all components firmly into position.

B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed at any time to ice and snow.

C. Extend insulation in thickness indicated to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.

D. Water-Piping Coordination: If water piping is located on inside of insulated exterior walls, coordinate location of piping to ensure that it is placed on warm side of insulation and insulation encapsulates piping.

E. Apply single layer of insulation to produce thickness indicated, unless multiple layers are otherwise shown or required to make up total thickness.

3.3 INSTALLATION OF GENERAL BUILDING INSULATION

A. Set vapor-retarder-faced units with vapor retarder to warm side of construction, unless otherwise indicated. Do not obstruct ventilation spaces, except for firestopping.

B. Tape ruptures in vapor retarder, and seal each continuous area of insulation to surrounding construction to ensure airtight installation.

C. Install acoustic insulation at interior walls spaces where indicated on Drawings, without gaps or voids. Do not compress insulation.

D. Install glass-fiber blankets in cavities formed by framing members according to the following requirements:

1. Use blanket widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill cavity, provide lengths that will produce a snug fit between ends.

2. Place blankets in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.

E. For wood-framed construction, install mineral-fiber blankets in accordance with ASTM C1320 and as follows:

1. With faced blankets having stapling flanges, secure insulation by friction fit inset or face stapling flanges to sides of framing members.

2. With faced blankets having stapling flanges, lap blanket flange over flange of adjacent blanket to produce airtight installation after concealing finish material is in place.

3.4 CLEANUP

A. Remove all scraps and debris from the site and thoroughly broom clean all surfaces inside and out.

END OF SECTION

SECTION 07 52 16.12

HOT-MOPPED SBS MODIFIED BITUMINOUS MEMBRANE ROOFING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Supply and install modified bitumen membrane roofing with protective covering, base flashings, roofing membrane expansion joints, cant strips, and counter flashings where indicated on Drawings, as specified herein, and as needed for a complete and proper installation.

1 Modified Bitumen Roofing System: Four-ply hot mopped bitumen mineral surfaced roofing system.

B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Section 06 10 00: Rough Carpentry.

2. Section 07 21 16: Blanket Insulation.

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

4. Section 07 92 00: Joint Sealants.

1.2 REFERENCES

A. ASTM D312 - Standard Specification for Asphalt Used in Roofing.

B. ASTM D5147/D5147M - Standard Test Methods for Sampling and Testing Modified Bituminous Sheet Material.

C. ASTM E408 - Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques.

D. FM Global - Roof Assembly Classifications.

E. NRCA (National Roofing Contractors Association) - Roofing and Waterproofing Manuals.

F. UL - Fire Hazard Classifications.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: Experienced Installer ("Roofer") to perform modified bitumen roofing work who has specialized in the installation of work similar to that required for this Project and who is approved by system manufacturer.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this Section with five (5) years documented experience.

C. Perform work in accordance with NRCA Roofing Manual, NRCA Waterproofing Manual, and manufacturer's instructions. Maintain one copy of each document on Site.

D. Mechanical and electrical subcontractors shall coordinate their work with roofing subcontractor. Flashing, counter-flashing and through-roof penetration flashing shall be performed by roofing subcontractor in accordance with manufacturer's recommendations.

E. Workmanship Liability: Information or assistance provided by the City's Inspector does not relieve the roofing installer of strict compliance with Specifications, Drawings and roofing material manufacturer's requirements.

F. Notify City's Inspector 72 hours prior to starting roofing installation and each time work is to be performed.

1.4 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

B. Shop Drawings: Indicate setting plan for insulation, layout of seams, direction of laps, base flashing details.

C. Product Data:

1. Membrane materials, base flashing materials, and protective coating.

2. Energy Star™ rating stamp for the material of this Section.

3. Product data highlighting the emissivity rating of the material of this Section when tested in accordance with ASTM E408.

D. Samples: Submit two 12" x 12" samples of roofing felt.

E. Manufacturer's Installation Instructions.

F. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

G. Manufacturer's Field Reports: Submit under provisions of the City's administrative requirements.

1.5 REGULATORY REQUIREMENTS

A. Conform to applicable code for roof assembly fire hazard requirements.

B. UL Listing: Class A Fire Hazard Classification.

C. FM: Roof Assembly Classification, Class 1 Construction, wind uplift requirement of 1-90, in accordance with FM Loss Prevention Data Sheets 1-28 and 1-29.

1.6 PRE-INSTALLATION CONFERENCE

A. Approximately two weeks prior to scheduled commencement of modified bitumen roofing installation and associated work, meet at Project Site to review Specifications and to walk deck. Installer, installer of each component of associated work, installers of deck or substrate construction to receive roofing work, installers of rooftop units and other work in and around roofing that must precede or follow roofing work (including mechanical work if any), Architect, City's Inspector, and others directly concerned with performance of the work are to be in attendance.

B. Review installation procedures and coordination required with related work.

1.7 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

B. Deliver products in manufacturer's original containers, dry, undamaged, seals and labels intact.

C. Store products in weather protected environment, clear of ground and moisture.

D. Stand roll materials on end.

1.8 ENVIRONMENTAL REQUIREMENTS

A. Asphalt temperature should be at the Equiviscous Temperature of ⌖ 25º F, at the point of application.

B. Do not apply roofing membrane to damp or frozen deck surface.

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

D. Temporary Roofing: When adverse job conditions or weather conditions prevent permanent roofing and associated work from being installed in accordance with requirements, and Architect determines that roofing cannot be delayed because of need for job progress or protection of other work, proceed with installation of temporary roofing. Engage roofing Installer to provide temporary roofing and to remove it prior to proceeding with permanent roofing work.

1.9 WARRANTY

A. No Dollar Limit Warranty: Submit executed copy of roofing manufacturer's NO DOLLAR LIMIT WARRANTY including flashing endorsement, signed by an authorized representative of the modified bitumen roofing system manufacturer, on a form that is acceptable to the City, for not less than twenty (20) years after date of Substantial Completion.

B. Installer's Warranty: Submit 2 executed copies of the installer's two (2)-year warranty on a form acceptable to the City, covering work of this Section including roofing membrane, composition flashing and roofing accessories, signed and countersigned by Installer (Roofer) and Architect.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Johns Manville.

B. GAF Materials Corporation.

C. Or equal.

2.2 MATERIALS

A. Membrane Roofing System: Johns Manville 4CND CR or equal.

B. Base Felt: A lightweight, asphalt-coated fiber glass base felt for nailing to deck, Johns Manville PermaPly 28 or equal, 1 layer.

C. Intermediate Felts: Asphalt-coated fiberglass ply felt, Johns Manville GlasPly Premier or equal, 2 layers.

D. Cap Sheet: Johns Manville DynaKap FR T1 CR or equal, bearing an Energy Star™ label and achieving an emissivity of at least 0.9 per ASTM E408 testing procedure. Fire-resistant, premium, fiberglass/polyester composite reinforced, SBS (Styrene-Butadiene-Styrene) modified bitumen cool roof cap sheet, 1 layer, conforming to ASTM D5147. Color as selected by Architect.

E. Asphalt: As approved by roofing manufacturer.

1. Up to 1/2” incline per foot, 190° F, Type III, Steep, 92 pounds total weight, conforming to ASTM D312.

2. 1/2" to 3" incline per foot, 220° F, Type IV, Special Steep, 69 pounds total weight, conforming to ASTM D312.

F. Base Flashings: Elastomeric, modified bitumen flashing sheet incorporating a flexible fiber glass/polyester/ composite mat in a blend of SBS (Styrene-Butadiene-Styrene) rubber and asphalt, DynaFlex CR by Johns Manville, or equal.

G. Sealants: Refer to Section 07 92 00.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that surfaces and site conditions are ready to receive work.

B. Verify deck is supported and secured, and verify adjacent roof members do not vary more than 1/4 inch (6 mm) in height.

C. Verify deck surfaces are dry and free of snow or ice.

D. Confirm dry deck by moisture meter with 12 percent moisture maximum.

E. Verify roof openings, curbs, pipes, conduit, sleeves, ducts, and vents through roof are solidly set, and wood cant strips, wood nailing strips and reglets are in place.

3.2 MEMBRANE APPLICATION

A. Apply base felt, intermediate felts and cap sheet in accordance with manufacturer's instructions.

B. On roof decks with slopes up to 1/2” per foot, the roofing felts and modified bitumen sheets may be installed either perpendicular or parallel to the roof incline.

C. Apply all felts so that they are firmly and uniformly set, without voids, into the hot asphalt. All felt edges shall be well sealed. The asphalt shall be applied just before the felt, at a nominal rate of 23 pounds per square. Asphalt temperature should be at the Equiviscous Temperature (EVT) of ±25° F at the point of application.

D. For modified bitumen sheets, the asphalt temperature shall be at a minimum of 400° F when the sheet is set into it for maximizing the bonding of the modified bitumen sheet.

E. Cap sheets must be allowed to relax in an unrolled position prior to installation.

3.3 FLASHINGS AND ACCESSORIES

A. Apply flexible sheet base flashings to seal membrane to vertical elements.

B. Secure to nailing strips and reglets at 4 inches o.c.

C. Install prefabricated roofing control and expansion joints to isolate roof into areas in accordance with manufacturer's instructions.

D. Coordinate installation of roof drains, curbs, and related flashings.

E. Seal flashings and flanges of items penetrating or protruding through the membrane.

3.4 FIELD QUALITY CONTROL

A. Field inspection will be performed under provisions of the City’s administrative requirements.

B. Correct identified defects or irregularities.

C. Upon completion of work, test for leaks by plugging the drains or damming areas and filling with three inches of water. Allow water to stand for 24 hours and inspect for leakage. Make necessary adjustments to stop leakage and retest until watertight.

3.5 CLEANING

A. In areas where finished surfaces are soiled by work of this Section, consult manufacturer of surfaces for cleaning advice and comply with their documented instructions.

B. Repair or replace defaced or disfigured finishes caused by work of this Section.

3.6 PROTECTION

A. Upon completion of roofing, institute appropriate procedures for surveillance and protection of roofing during remainder of construction period.

B. Where traffic must continue over finished roof membrane, protect surfaces.

C. Protect exposed roof terminations at parapets or other walls and curbs, and expansion joints, until permanent flashing is applied.

D. At end of construction period, or at a time when remaining construction will in no way affect or endanger roofing, inspect roofing and prepare a written report, with a copy to the Architect, describing nature and extent of damage found.

E. Repair or replace (as required) deteriorated or defective work found at time of above inspection to a condition free of damage and deterioration at time of Substantial Completion and in accordance with requirements of specified warranties.

3.7 FINAL INSPECTION

A. Final inspection will be performed by the City’s Inspector.

END OF SECTION

SECTION 07 62 00

SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide flashing and sheet metal not specifically described in other Sections of these Specifications but required to prevent penetration of water through the exterior shell of the building, and as needed for a complete and proper installation including the following.

1. Reglets.
2. Gutters.
3. Downspouts.
4. Conductor Heads.
5. Splash Pans.
6. Roof-Penetration Flashing.
7. Scuppers.
8. Built-in Gutters.
9. Exposed trim, gravel stops, fascia.
10. Copings.
11. Base flashing.
12. Counterflashing.

B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Section 07 52 16.12: Hot-Mopped SBS Modified Bituminous Membrane Roofing.
2. Section 07 92 00: Joint Sealants.
3. Section 09 90 00: Painting and Coating.

1.2 REFERENCES

A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

B. ASTM B32 - Standard Specification for Solder Metal.

C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.

D. SMACNA - Architectural Sheet Metal Manual 7th Edition.

1.3 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. In addition to complying with pertinent codes and regulations, comply with pertinent recommendations contained in current edition of "Architectural Sheet Metal Manual" published by SMACNA.

C. Standard commercial items may be used for flashing, trim, reglets, and similar purposes provided such items meet or exceed the quality standards specified.

1.4 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

B. Product Data:

1. Materials list of items proposed to be provided under this Section.

2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.

3. Manufacturer's recommended installation procedures.

C. Shop Drawings in sufficient detail to show fabrication, installation, anchorage, and interface of the work of this Section with the work of adjacent trades.

1.5 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

PART 2 - PRODUCTS

2.1 MATERIALS AND GAGES

A. Where sheet metal is required and no material or gage is indicated on the Drawings, provide 24 gage.

B. Provide 20 gage sheet metal for all gutters and downspouts.

2.2 GALVANIZED IRON

A. Provide sheet metal or sheet iron of a standard brand of open-hearth copper-bearing steel, copper-molybdenum iron, or pure iron sheets.

B. Zinc Coating:

1. Provide zinc coating by hot-dip galvanize to all flashing, sheet metal, gutter and downspout surfaces.

2. Weight: Provide not less than 1-1/4 oz. per sq. ft. or more than 1-1/2 oz. per sq. ft, to surfaces required to be galvanized.

3. Comply with ASTM A653.

2.3 OTHER MATERIALS

A. Nails, Rivets, and Fasteners: Use only soft iron rivets having rust-resistive coating, galvanized nails, and cadmium plated screws and washers in connection with galvanized iron and steel.

B. Flux: Where flux is required, use raw muriatic acid.

C. Solder: Where solder is required, comply with ASTM B32.

D. Parapet Coping: Provide galvanized metal parapet coping with continuous cleat as manufactured by Construction Metals Inc. or equal.

E. Provide other materials, not specifically described but required for a complete and proper installation, subject to the approval of the Architect.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 WORKMANSHIP

A. General:

1. Form sheet metal accurately and to the dimensions and shapes required, finishing molded and broken surfaces with true, sharp, and straight lines and angles and, where intercepting other members, coping to an accurate fit and soldering securely.

2. Unless otherwise specifically permitted by the Architect, turn exposed edges back 1/2".

B. Form, fabricate, and install sheet metal so as to adequately provide for expansion and contraction of the finished Work.

C. Weatherproofing:

1. Finish watertight and weathertight where so required.

2. Make lock seam work flat and true to line, sweating full of solder.

3. Make lock seams and lap seams, where soldered, at lease 1/2" wide.

4. Where lap seams are not soldered, lap according to pitch, but in no case less than 3".

5. Make flat and lap seams in the direction of flow.

D. Joints:

1. Join parts with rivets or sheet metal screws where necessary for strength and stiffness.

2. Provide suitable watertight expansion joints for runs of more than 40'-0", except where closer spacing is indicated on the Drawings or required for proper installation.

3. Seal moving joints in metal work with elastomeric sealing complying with ASTM C920.

E. Nailing:

1. Whenever possible, secure metal by means of clips or cleats, without nailing through the exterior metal.

2. In general, space nails, rivets, and screws not more than 8" apart and, where exposed to the weather, use lead washers.

3. For nailing into wood, use barbed roofing nails 1-1/4" long by 11 gage.

4. For nailing into concrete, use drilled plug holes and plugs.

F. Flashings and Metal Trim: Provide all flashings, reglets, counterflashings, gravel stops, parapet caps, metal trim, and any other fabricated items and miscellaneous sheet metal work indicated or required to provide a watertight installation. The most important items and those requiring detail descriptions are mentioned. Miscellaneous items and trim not mentioned or described shall be furnished and installed in accordance with the intent of the Drawings and Specifications and as required to complete the Work.

G. Reglets and Counterflashings: Reglets and counterflashings shall be installed in accordance with the manufacturer's printed installation drawings and instructions and as otherwise detailed on the Drawings.

H. Vent Flashings: Make plumbing and mechanical vent flashings entirely of 4-lb. lead. Fabricate flanges a minimum of 18" square, and long enough to allow for turning over lead into the end of the vent pipe. Vent flashings will be supplied on the Plumbing Drawings but installed under this Section. Coordinate all vent flashing with roofing system and match color and finish of same.

3.3 EMBEDMENT

A. Embed all metal in connection with roofs in a solid bed of mastic, using materials and methods described in Section 07 92 00 of these Specifications.

3.4 SOLDERING

A. Thoroughly clean and tin the joint materials prior to soldering.

B. Perform soldering slowly, with a well heated copper, in order to heat the seams thoroughly and to completely fill them with solder.

C. Perform soldering with a heavy soldering copper of blunt design, properly tinned for use.

D. Make exposed soldering on finished surfaces neat, full flowing, and smooth.

E. After soldering, thoroughly wash acid flux with a soda solution.

3.5 TESTS

A. Upon request of the Architect, demonstrate by hose or standing water that the flashing and sheet metal are completely watertight.

3.6 CLEANUP

A. Remove all scraps and debris from the Site caused by this work.

END OF SECTION

SECTION 07 65 26

SELF-ADHERING SHEET FLASHING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide flexible rubberized asphalt adhesive based self-sealing flashing tape required to prevent penetration of water through the exterior shell of the building, as needed for a complete and proper installation.

B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Section 06 10 00: Rough Carpentry.

2. Section 07 92 00: Joint Sealants.

3. Section 08 51 13: Aluminum Windows.

4. Section 09 24 23: Cement Stucco.

1.2 REFERENCES

A. AAMA 711 - Voluntary Specification for Self Adhering Flashing Used for Installation of Exterior Wall Fenestration Products.

B. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension.

C. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.

D. ASTM D3652/D3652M - Standard Test Method for Thickness of Pressure-Sensitive Tapes.

E. ASTM E2112 - Standard Practice for Installation of Exterior Windows, Doors, and Skylights.

1.3 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1.4 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

B. Product Data:

1. Materials list of items proposed to be provided under this Section.

2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.

3. Manufacturer's recommended installation procedures.

C. Samples: Each type of product specified.

1.5 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

B. Comply with manufacturer’s recommendations for storage and handling of each product.

1.6 WARRANTY

A. Completed installation shall be guaranteed against defects of material for a period of five (5) years from the date of substantial completion of the flashing system.

1. Submit manufacturer’s warranty that flashing and accessories are free of defects at time of delivery, and are manufactured to meet manufacturer’s published physical properties and material specifications.

2. Submit installer’s warranty that flashing and accessories have been installed in accordance with manufacturer’s recommendations.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Flashing:

1. Vycor® Plus Flashing manufactured by GCP Applied Technologies, Inc., or equal.

2. 0.5 mm of a black colored rubberized asphalt adhesive integrally bonded to 0.1 mm of cross-laminated polyethylene film to provide a min. 0.6 mm (25 mil) thick membrane. Membrane shall be interleaved with silicone-coated release paper until installed.

B. Performance Requirements:

1. Meets or exceeds the requirements set forth in AAMA 711 voluntary specification for self adhered flashing Level 3 requirement for elevated temperature exposure.

2. Meets or exceeds the requirements set forth in ASTM E2112 for flashing exterior windows.

3. Water Penetration around Nails: ASTM D1970 Section 7.9, modified per section 5.2.1 of AAMA 711 voluntary specification - Pass 1.2 in. head of water.

4. Tensile Strength: ASTM D412, Die C Modified - minimum 143 psi.

5. Thickness: ASTM D3652 - minimum 25 mils.

6. Color: Visual inspection - black film with white printing.

2.2 FLASHING ACCESSORIES

A. Primer: Perm-A-Barrier WB Primer manufactured by GCP Applied Technologies, Inc., or equal.

1. Water-based primer for imparting an aggressive, high tack finish on the treated substrate.

2. Flash Point: No flash to boiling point.

3. Solvent Type: Water.

4. VOC Content: Not to exceed 10 g/L.

5. Application Temperature: 25º F and above.

6. Freezing point (as packaged): 21º F.

B. Plastic Corner Guards: VYCORner manufactured by GCP Applied Technologies, Inc., or equal.

C. Provide other materials, not specifically described but required for a complete and proper installation, subject to the approval of the Architect.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine conditions, with installer present, for compliance with requirements for installation, tolerances, and other specific conditions affecting performance of flashing. Remove all deleterious materials from surfaces to be flashed. Do not proceed until unsatisfactory conditions are corrected.

B. Review requirements for sequencing of installation of flashing assembly with installation of windows to provide a weather-tight flashing assembly.

3.2 INSTALLATION

A. General: Install flashing to dry surfaces at air and surface temperatures of 25º F and above in accordance with manufacturer's recommendations at locations indicated. Primer is not required for most wood substrates including plywood and OSB, provided they are clean and dry.

B. Flexible Wall Flashing:

1. Precut pieces of flashing to easily handled lengths for each location.

2. Remove silicone-coated release paper and position flashing carefully before placing it against the surface.

3. When properly positioned, place against surface by pressing firmly into place by hand roller. Fully adhere flashing to substrate to prevent water from migrating under flashing.

4. Overlap adjacent pieces 2 in. and roll all seams with a steel hand roller.

5. Trim bottom edge 1/2 in. back from exposed face of the wall. Flashing shall not be permanently exposed to sunlight.

6. At heads, sills and all flashing terminations turn up ends a minimum of 2 in. and make careful folds to form an end dam, with the seams sealed.

7. Do not expose flashing membrane to sunlight for more than one hundred and twenty days prior to enclosure.

C. Accessories:

1. When required by dirty or dusty site conditions or by surfaces having irregular or rough texture, apply primer by brush or roller at the rate recommended by manufacturer, prior to flashing installation. Allow primer to dry completely before flashing application.

2. Install prefabricated corner guards at window sills in accordance with manufacturer's recommendations.

3.3 CLEANUP AND PROTECTION

A. Remove all scraps and debris from the Site caused by this work.

B. Protect installed sheet flashing from damage during construction.

END OF SECTION

SECTION 07 92 00

JOINT SEALANTS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Throughout the Work, seal and caulk joints where shown on the Drawings, between dissimilar materials and elsewhere as required to provide a positive barrier against passage of moisture and passage of air.

B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.2 REFERENCES

A. ASTM C834 - Standard Specification for Latex Sealants.

B. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.

C. ASTM D1056 - Standard Specification for Flexible Cellular Materials-Sponge or Expanded Rubber.

D. FS A-A-272B - Caulking Compounds.

1.3 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Installer Qualifications: An experienced installer who has specialized in installing joint sealants similar in material, design, and extent to those indicated for this Project with minimum five (5) years documented experience.

1.4 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

B. Product Data: Submit manufacturer's specifications and other data needed to prove compliance with the specified requirements.

C. Submit manufacturer's recommendations which, when approved by the Architect, will become the basis for accepting or rejecting actual installation procedures used on the Work.

D. Samples: Prior to ordering materials, submit to the Architect samples of each sealant proposed to be used, indicating the color range available of each material in an "exposed" location.

1.5 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

B. Do not retain at the Job Site material that has exceeded the shelf life recommended by its manufacturer.

1.6 WARRANTY

A. Special Manufacturer's Warranty for All Exterior Sealants: Written warranty, signed by elastomeric sealant manufacturer agreeing to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within twenty (20)-year minimum from date of Substantial Completion.

B. Special warranties specified in this Article exclude deterioration or failure of elastomeric joint sealants from the following:

1. Movement of the structure resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression caused by structural settlement or errors attributable to design or construction.

2. Disintegration of joint substrates from natural causes exceeding design specifications.

3. Mechanical damage caused by individuals, tools, or other outside agents.

4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

1.7 EXTRA MATERIALS

A. Provide an additional 2 tubes of each type of sealant used on the Project for City's maintenance use.

PART 2 - PRODUCTS

2.1 SEALANTS

A. Joint Material Types: Color of sealant to match color of adjacent work.

1. One-part polysulfide, ASTM C920, nonsag, Class 25 sealant without primer. Use for vertical and horizontal joints in connection with concrete, plaster, steel, aluminum and glass. Do not use in traffic areas.

2. Two-part polysulfide, ASTM C920. Use for vertical and horizontal joints in connection with masonry, concrete, plaster, steel, aluminum and glass. Do not use in traffic areas.

3. One part moisture curing, gun grade polyurethane sealant for general purpose use in concrete, masonry, window frame perimeters and similar type construction joints. For exterior and interior use. Conform to ASTM C920, Type S, Grade NS, Class 25, Use NT, M, T, A and O.

4. Multi-part polyurethane base, ASTM C920. Use for vertical joints in connection with all building materials.

5. One part acrylic sealant. Use for vertical and horizontal joints in connection with all building materials such as exterior sills, jamb and heads of window frames, door frames, louvers and similar openings, and where metal, wood or other materials abut or join masonry, concrete or each other. Do not use in traffic areas.

6. 2-part elastomeric sealant, polyurethane-based, complying with ASTM C920, Class A, Type I (self-leveling) unless Type II is recommended by manufacturer for application shown. Use for exterior applications other than building joints, such as concrete pavement and sidewalks, or other types of pavement.

7. Building Joints - Interior Applications: Provide butyl rubber sealant, composed of polymerized butyl rubber and inert fillers (pigments), solvent-based with minimum 75% solids, non-sag consistency, tack-free time of 24 hours or less, paintable, non-staining, complying with FS A-A-272B.

8. One-part mildew-resistant silicone sealant, complying with ASTM C920, Type S, Grade NS, Class 25, translucent or white in color. Use for interior joints in ceramic tile and at plumbing fixtures.

9. For all interior joints not otherwise scheduled, provide acrylic latex, one-part, non-sag, mildew resistant acrylic emulsion compound complying with ASTM C834, Type S, Grade NS, formulated to be paintable to match adjacent surfaces.

10. For other applications, provide products especially formulated for the proposed use and approved in advance by the Architect.

11. Modified Sealant: Where recommended by manufacturer, provide bituminous-modified compound, recommended for compatibility in required application.

12. Acoustical Joint Sealant: Refer to Section 09 21 16.

2.2 PRIMERS

A. Use only those primers that are quick drying, colorless, and non-staining, have been tested for durability on the surfaces to be sealed and are specifically recommended for this installation by the manufacturer of the sealant used.

2.3 BACKUP MATERIALS

A. Joint Backing: ASTM D1056, round, recommended by sealant manufacturer to suit application; oversized 25 percent larger than joint width.

B. Use only those backup materials that are specifically recommended for this installation by the manufacturer of the sealant used, which are non-absorbent, and which are non-staining.

2.4 OTHER MATERIALS

A. Provide other materials, not specifically described but required for a complete and proper installation, subject to the approval of the Architect.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 APPLICATION AND WORKMANSHIP

A. Surface Preparation:

1. Clean joints and spaces to be sealed of all dirt, dust, mortar, oil, and other foreign materials. Where necessary, degrease with an approved solvent or commercial agent. Dry surfaces thoroughly before application of sealant.

2. Enclose all joints on three sides. Where grooves have not been provided, clean out suitable grooves to the depth required or as indicated on Drawings and grind to a minimum width of 1/4 inch without damage to the adjoining work. Do not grind on metal surfaces.

3. Prepare surfaces to receive sealant according to manufacturer's specifications. Use air pressure or other approved methods. Use masking tape to keep sealant off exposed surfaces.

4. Verify that joint backing and release tapes are compatible with sealant.

B. Application:

1. Locations: Seal around all openings in exterior walls. Seal all other joints as specified, shown on Drawings, and required to provide a positive barrier against moisture and air.

2. General: Use only experienced mechanics using proper tools. Apply as specified and in accordance with the manufacturer's installations and recommendations.

3. Priming: Prime concrete, porous surfaces, and any other surfaces recommended by the manufacturer, before applying sealants. Apply primer with a brush that will reach all parts of joints to be filled.

4. Packing: Fill joints and spaces deeper than 1/2 inch with packing to within 1/2 inch of surface. Then fill joints with sealant. Use a minimum of 3/8” caulking compound in all joints 1/2" or deeper.

5. Sealant: Do not use compounds when they become too jelled to be discharged in a continuous flow from the gun. Do not modify compounds with liquids, solvents, or powders.

6. Joint Backing: Install joint backing to achieve a neck dimension no greater than 1/3 of the joint width.

7. Tools and Workmanship: Use guns with proper size nozzles. Use sufficient pressure to fill all voids and joints solidly. In sealing around openings, include entire perimeter of each opening, unless shown otherwise. If gun is impracticable, use suitable hand tools.

8. Finishing: Neatly point seal joints on flush surfaces with beading tool, and internal corners with eaving tool. Cleanly remove excess material. Leave exposed sealant free of wrinkles and uniformly smooth. Completely seal before final coats of paint are applied.

9. Flashing: Properly prime all flashing and set in mastic.

3.3 CLEANING UP

A. Clean adjacent surfaces free from sealant as the installation progresses, using solvent or cleaning agent recommended by the manufacturer of the sealant used.

B. Upon completion of the work of this Section, promptly remove from the Job site all debris, empty containers, and surplus material derived from this portion of the Work.

END OF SECTION

SECTION 08 11 13.13

STANDARD HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide steel doors and frames which are not specifically described in other Sections of these Specifications, where shown on the Drawings, as specified herein, and as needed for a complete and proper installation including, but not necessarily limited to the following.

1. Steel doors.
2. Steel door frames.
3. Sidelight frames.
4. Fire-rated door and frame assemblies.
5. Steel window frames.
6. Louvers in doors.

B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Section 08 14 16: Flush Wood Doors.
2. Section 09 90 00: Painting and Coating.

1.2 REFERENCES

A. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames.

B. NFPA 80 - Standard for Fire Doors and Other Opening Protectives.

1.3 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Unless specifically otherwise approved by the Architect, provide all products of this Section from a single manufacturer.

C. Manufacture doors in accordance with the latest standards of ANSI/SDI A250.8.

1.4 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

B. Product Data: Materials list and manufacturer's specifications and other data needed to prove compliance with the specified requirements.

C. Shop Drawings: Show details of each frame type, elevations of door and window designs, details of openings, and details of construction, installation, and anchorage.

1.5 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

B. Deliver doors and frames palleted, wrapped or crated to provide protection during transport and job storage.

C. Store doors and frames at the building site under cover, in a dry location on minimum 4 inch high wood blocking. Provide 1/4-inch space between stacked doors to promote air circulation. Cover stacked units to avoid dampness or other wet construction work, to protect from rusting.

D. During and after installation, protect frames and doors from damage from construction activities. Damaged doors and frames will be rejected and must be replaced with new doors and frames without additional cost.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Provide standard products of Ceco Door, Curries, Republic Doors and Frames, or equal.

2.2 METAL DOORS

A. Type and Design: Provide full-flush design, in dimensions and types shown on the Drawings, labeled or non-labeled as indicated on the Door Schedule on the Drawings, properly reinforced for the finish hardware.

B. Interior Door Performance: Level 2 - 18 gage, heavy duty.

C. Exterior Door Performance: Level 3 - 16 gage, extra heavy duty.

2.3 METAL DOOR AND WINDOW FRAMES

A. Frame Type and Design:

1. Provide frames of the types and dimensions shown of Drawings, labeled or non-labeled as indicated on the Door Schedule in the Drawings, in 16 gage for interior frames and 14 gage for exterior frames, properly reinforced for the finish hardware, with appropriate anchors as required.

2. Miter corner joints and provide continuous weld joints.

B. Glazed Frames: Provide steel glazing stops and moldings of sizes indicated for field installation with countersunk oval head sheet metal screws. Stops and moldings shall be #16 gage material unless otherwise indicated or specified.

2.4 OTHER MATERIALS

A. Door Louvers: Provide manufacturer's standard louvers as indicated on Drawings.

B. Provide other materials not specifically described but required for a complete and proper installation, subject to the approval of the Architect.

2.5 FINISH

A. Doors and Frames: Pre-clean and shop prime each door for finish painting which will be performed at the Job Site under Section 09 90 00 of these Specifications.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 INSTALLATION

A. Frames: Set accurately in position, plumb, aligned, and braced securely until permanent anchors are set. Anchor bottom of frames securely to floors with expansion bolts or powder-driven fasteners. Build-in wall anchors or secure to adjoining constructions as indicated or required. Where frames require ceiling struts or other overhead bracing, anchor securely to structure above. Fill frames solid with Portland cement grout where shown or required by class of opening.

B. Hanging Doors: Hang all doors expertly and fit snug against all stops. Fit accurately and hang free from hinge; bind with uniform clearance of 3/32" at heads and jambs. After hanging, make all adjustments and then remove lockset hardware for finish painting. Reinstall hardware after finish painting.

C. Finish Hardware:

1. Secure templates from the finish hardware supplier, and accurately install, or make provision for all hardware at the factory.

2. Install accurately and securely without marking or defacing hardware or finish work. Fasten hardware with machine screws or bolts.

3. Embed thresholds in approved mastic, and secure to concrete floors with stainless steel screws in nonferrous expansion shields, unless other type anchors are shown.

4. Test all hardware to assure correct alignment and operations.

5. Protect finish hardware until completion of building. Leave all hardware in perfect working order. Clean and polish.

D. Weatherstripping: Expertly install weather-stripping for exterior doors and frames.

E. Labeled Doors and Frames: Install labeled doors and frames, including hardware and operational characteristics, in accordance with NFPA 80.

3.3 SEALANT

A. Seal and caulk perimeter of door frames where shown or required to fill space between frame and adjoining material. Sealant materials and applicable requirements of Section 07 92 00 apply to this work.

3.4 ADJUSTING AND CLEANING

A. Immediately after erection, sand smooth all rusted and damaged areas of prime coat, and apply touchup of compatible air-drying primer.

B. Final Adjustments:

1. Check and readjust operating finish hardware items in hollow metal work just prior to final inspection.

2. Leave work in complete and proper operating condition.

3. Remove defective work and replace with work complying with the specified requirements.

END OF SECTION

SECTION 08 14 16

FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide flush wood doors, complete in place with finish hardware installed, where shown on the Drawings, as specified herein, and as needed for a complete and proper installation including, but not necessarily limited to the following.

1. Solid core doors with hardwood veneer faces.

2. Fire-rated wood doors.

3. Louvers in wood doors.

4. Vision lites.

B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Section 08 11 13.13: Standard Hollow Metal Doors and Frames.

2. Section 08 81 00: Glass Glazing.

3. Section 09 90 00: Painting and Coating.

1.2 REFERENCES

A. ANSI A208.1 - The American National Standard for Particleboard.

B. ANSI/WDMA I.S.1A - Industry Standard for Interior Architectural Wood Flush Doors.

C. NAAWS 4.0 - North American Architectural Woodwork Standards.

D. NFPA 80 - Standard for Fire Doors and Other Opening Protectives.

E. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies.

F. UL 10B - Standard for Fire Tests of Door Assemblies.

1.3 QUALITY ASSURANCE

A. Manufacturer: Firm (woodwork manufacturer) with no less than five (5) years of production experience similar to this Project, whose qualifications indicate the ability to comply with the requirements of this Section.

B. All doors shall be fabricated by the manufacturer to the dimensions specified.

C. Single Source Responsibility: A single manufacturer shall provide and install the work of this Section.

D. Door modifications are not permitted, unless reviewed by the Architect.

E. Regulatory Requirements:

1. Fire Door and Panel Construction: Conform to NFPA 252 and UL 10B. All intumescent seals to be provided within the structure of the door. Surface mounted intumescent seals are not acceptable.

2. Installed Fire Rated Door Assembly: Conform to NFPA 80 for fire rated class as scheduled.

F. In addition to complying with pertinent codes and regulations of governmental agencies having jurisdiction, comply with NAAWS 4.0 and ANSI/WDMA I.S.1A for “custom” grade doors.

1.4 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

B. Product Data: Submit materials list and manufacturer's specifications and other data needed to prove compliance with the specified requirements.

C. Submit four finished samples, approximately 8" x 8" in size, of each of the proposed door face materials. Veneer samples shall represent the range of color and grain expected to be provided.

D. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details; location and extent of hardware blocking; species, cut, grade, factory finishing, fire ratings and other pertinent data.

1.5 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

B. Delivery and Storage:

1. Deliver doors in manufacturer's original containers, clearly marked with manufacturer's name, brand name, size, thickness, and identifying symbol on the covering.

2. Provide a clean area, well-ventilated and protected from direct sunlight, excessive heat, rain or moisture.

3. Store doors flat on a level surface, at least 4” off the floor. Cover to keep clean, but permit air circulation. Millwork shall be acclimated to existing conditions for 72 hours prior to installation.

4. Store and protect wood doors from damage until final acceptance by City.

1.6 WARRANTY

A. Guarantee all wood doors for life of original installation against warpage or defects, agreeing to replace such defect, including installation and finish.

PART 2 - PRODUCTS

2.1 INTERIOR DOORS

A. Solid core flush veneered, 5 ply, faced both sides with WDMA "A" grade Birch for transparent finish, fully bonded to core, 1 3/4" thick, fire rated as indicated.

1. Solid Core: Staved lumber core, ANSI A208.1 Grade LD-2 particleboard core, or other manufacturer’s standard core material to meet fire rating requirements.

2. Adhesive and Bonding: Bonding between veneer plies of wood face panel, and between door faces, frame and core unit shall be fabricated with type I or II waterproof adhesives for interior doors.

3. Edge Strips: Matching hardwood veneer.

4. Face Veneer: 2-ply door skin assembly.

5. Cut: As selected by Architect.

6. Transparent Finish: Factory pre-finished.

7. Fabricate fire rated doors in accordance with NAAWS 4.0 Standards and to UL requirements. Attach fire-rating label to door.

B. Door type, size, and location of lights shall be as indicated on the Drawings.

C. Openings for lights, louvers and grilles shall be performed by the manufacturer, or in a certified door service mill in accordance with manufacturer’s details, and in compliance with testing agency requirements.

2.2 PREFINISHED LOUVERS

A. At least 18-gauge cold rolled steel frames and 18 gauge blades; type FLDL-UL by Anemostat, Carson, CA, or equal.

B. A.B. Light Proof Louvers: Type DRDL by Anemostat, or equal.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 INSTALLATION

A. Install fire rated and non-rated doors as specified in the NAAWS 4.0, Section 9 and provide a Woodwork Institute Certified Compliance Certificate for Installation at Substantial Completion. In addition, install fire rated doors in accordance with NFPA 80 and to UL requirements.

B. Hanging Doors: Hang doors expertly and fit snug against all stops. Fit accurately and hang free from hinge bind with uniform clearance of 1/16" at heads and jambs and 1/4" over finish floor surface. Undercut doors for carpeting and ventilating purposes where required.

C. Install finish hardware in strict accordance with the recommendations of its manufacturer.

D. Remove finish hardware for finishing and reapply after finishing is complete and dry.

E. Doors shall operate freely, but not loosely, without sticking or binding, without hinge-bind conditions and with hardware properly adjusted and functioning.

3.3 ADJUSTING AND CLEANING

A. Final Adjustments:

1. Check and readjust operating finish hardware items just prior to final inspection.

2. Leave work in complete and proper operating condition.

3. Remove defective work and replace with work complying with the specified requirements.

B. Broom clean inside and out and remove all scraps and other debris from Site caused by this work.

END OF SECTION

SECTION 08 51 13

ALUMINUM WINDOWS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide thermally improved aluminum casement windows where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Section 07 92 00: Joint Sealants.

2. Section 09 24 23: Cement Stucco.

1.2 REFERENCES

A. AAMA - American Architectural Manufacturers Association.

B. AAMA 2400 - Standard Practice for Installation of Windows with a Mounting Flange in Wood-Frame Construction Using Exterior Barrier Methods.

C. AAMA 2410 - Standard Practice for Installation of Windows with an Exterior Flush Fin Over an Existing Window Frame.

D. AAMA/WDMA/CSA 101/I.S.2/A440 - North American Fenestration Standard / Specification for Windows, Doors, and Skylights.

E. ASTM E588 - Standard Practice for Detection of Large Inclusions in Bearing Quality Steel by the Ultrasonic Method.

F. NFRC - National Fenestration Rating Council.

G. NFRC 100 - Procedure for Determining Fenestration Product U-factors.

1.3 PERFORMANCE REQUIREMENTS

A. Thermal Performance: Comply with NFRC 100.

B. Air Leakage, Water Resistance, Structural Test: Comply with AAMA/WDMA/CSA 101/I.S.2/A440.

C. Forced-Entry Resistance: Comply with ASTM E588.

1.4 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Manufacturer Qualifications: AAMA and NFRC member with minimum five (5) years experience in producing aluminum windows of the type(s) specified.

C. Certifications for Insulated Glass Windows:

1. AAMA: Windows shall be Gold Label certified with label attached to frame per AAMA requirements.

2. NFRC: Windows shall be NFRC certified with temporary U-factor label applied to glass and an NFRC tab added to permanent AAMA frame label.

1.5 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

B. Proof of manufacturer qualifications.

C. Product Data:

1. Manufacturer's specifications and other data showing compliance with all specified and code requirements. Include U-Factor and structural rating charts required for AAMA and NFRC labeling requirements.

2. Shop drawings in sufficient detail to show fabrication, installation, anchorage, and interface of the work of this Section with the work of adjacent trades.

3. Installation Instructions: AAMA 2400 or AAMA 2410.

4. Maintenance manual with instructions for cleaning, repair, and glass replacement, at time of Project Closeout.

D. Samples: Accompanying the shop drawings, submit the following for Architect's approval.

1. Sample of each exposed member, 12" length.

2. Color Samples: Minimum 1 x 4 inch samples of aluminum with anodized color.

3. Glass sample, showing specified tint color.

1.6 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

B. Follow manufacturer's instructions on label applied to windows.

1.7 WARRANTY

A. Upon completion of this portion of the Work, deliver to the Architect two copies of a written Warranty agreeing to replace work of this Section which fails due to defective materials or workmanship within ten (10) years after Date of Substantial Completion.

B. Failure due to defective materials or workmanship is deemed to include, but not to be limited to:

1. Failures in operation of operating component or components.

2. Leakage or air infiltration in excess of the specified standard.

3. Deterioration of finish to an extent visible to the unaided eye.

4. Defects which contribute to unsightly appearance, potential safety hazard, or potential untimely failure of the work of this Section or the Work as a whole.

PART 2 - PRODUCTS

2.1 CASEMENT WINDOWS

A. TIE Aluminum Windows Series as manufactured by Milgard Manufacturing, Inc., or equal.

1. Casement: 920 Series, 1 3/8-inch nail fin setback.

2. Frame: 920 Series, 2 1/4".

3. Sash: Depth of 1 1/2", solid aluminum extrusion.

2.2 MATERIALS

A. Aluminum: Comply with requirements of AAMA/WDMA/CSA 101/I.S.2/A440, 6063-T5 temper for strength, corrosion resistance and application of required finish.

B. Extruded frame members are to be 0.060" in thickness for structural walls.

C. Insulated Glass Units: Class A, 1 inch thick overall.

1. Glazing Type: Clear, Low-E, no argon gas. Verify with manufacturer.

2. U-Value: ≤ 0.45.

3. SHGC: ≤ 0.30.

4. Spacer Bar: As selected by Architect.

D. Hardware:

1. Cam style locking mechanism with latch on jamb.

2. Tension adjustable hinge.

E. Weatherstripping: Dual durometer vinyl bulb seal.

F. Caulking and Sealants: Conform to Section 07 92 00 as required.

G. Insect Screens: Provide tight-fitting screen for operating sash with hardware to allow easy removal.

1. Screen Cloth: Charcoal colored fiberglass mesh.

2. Frame:

a. Cambered formed aluminum with rigid plastic corner keys.

b. Pull tabs for removal.

2.3 FABRICATION

A. Fabricate frames and sash with mechanically joined corners. Fasten corners with corrosion resistant screws and seal with acrylic sealant.

2.4 FINISHES

A. Frame and Sash Color: Clear anodized exterior finish. Provide AA-C22-A31 Class II Clear finish, minimum 0.4 mils thick.

1. Color match screen frame to window frame and sash color.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

1. Verify that framing complies with AAMA 2400 or AAMA 2410.

2. Verify that fasteners in framed walls are fully driven and will not interfere with window installation.

3.2 COORDINATION

A. Coordinate as required with other trades and make field measurements as required to assure proper fit.

B. Commencement of work by installer is acceptance of substrate conditions.

3.3 INSTALLATION

A. Install the work of this Section in strict accordance with the original design, the approved shop drawings, pertinent requirements of governmental agencies having jurisdiction, and manufacturer's recommendations, anchoring all components firmly into position for long life.

B. Install windows in framed walls in accordance with AAMA 2400 or AAMA 2410.

C. Do not remove temporary labels.

D. Install insect screens on operable sash.

E. When glazing is performed under this Section, provide the types of glass required and glaze in accordance with pertinent provisions of Section 08 81 00 of these Specifications.

3.4 PROTECTION AND CLEANING

A. After installation, clean metal and glass surfaces, on both interior and exterior, of all mortar, paint and other contaminants. Use no abrasives. Use mild soap and water.

B. Remove temporary labels and retain for Closeout Submittals.

After cleaning, protect all work against damage until date of Substantial Completion.

END OF SECTION

SECTION 08 81 00

GLASS GLAZING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide glazing and glazing accessories where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Section 08 11 13.13: Standard Hollow Metal Doors and Frames.

2. Section 08 14 16: Flush Wood Doors.

3. Section 08 51 13: Aluminum Windows.

1.2 REFERENCES

A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials.

B. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.

C. ASTM C1036 - Standard Specification for Flat Glass.

D. GANA (Glass Association of North America) - Glazing Manual.

E. GANA (Glass Association of North America) - Sealant Manual.

F. C.B.C. (California Building Code) 2019 Edition.

1.3 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. In addition to complying with pertinent codes and regulations of governmental agencies having jurisdiction, comply with 16 CFR 1201 and pertinent recommendations contained in:

1. GANA Sealant Manual.

2. GANA Glazing Manual.

1.4 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

B. Product Data: Submit manufacturer's specifications, installation procedures and other data for each type of glass and glazing material required.

C. Submit samples of each type of glass and gasket proposed to be used.

1.5 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

PART 2 - PRODUCTS

2.1 GLASS

A. General:

1. For all glass, provide the type and thickness shown on the Drawings or specified herein.

2. Where type or thickness, or both, are not shown on the Drawings or specified herein, provide type and thickness as required by the CBC.

3. Provide dual glazing where indicated.

B. Plate or Float Glass: Comply with ASTM C1036, Type I, Class 1, Quality q3.2.

2.2 OTHER MATERIALS

A. Provide single-component silicone glazing sealants complying with ASTM C920.

B. Select glazing sealants that are compatible with one another and with other materials they will contact, including glass products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.

C. Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range.

D. Provide other materials, not specifically described but required for a complete and proper installation, subject to the approval of the Architect.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

B. Clean glazing channels, stops, and rabbets to receive the glazing materials, making free from obstructions and deleterious substances which might impair the work.

1. Remove protective coatings which might fail in adhesion or interfere with bond of sealants.

2. Comply with manufacturers' instructions for final wiping of surfaces immediately prior to application of primer and glazing compounds or tapes.

C. Sizes on Drawings are approximate. Determine actual sizes by measuring in the field.

3.2 INSTALLATION

A. General: Perform no work below 40 degrees F. Check dimensions of openings to be sure that adequate clearances are maintained on all sides. Shop out all glass with clean, straight edges, free from chips and fissures.

B. Inspect each piece of glass immediately prior to start of installation.

1. Do not install items which are improperly sized, have tong marks, have damaged edges or are scratched, abraded, or damaged in any other manner.

2. Do not remove labels from glass until inspection and final clean up.

C. Locate setting blocks at sills one quarter of the width of the glass in from each end of the glass, unless otherwise recommended by the glass manufacturer.

1. Use blocks of proper size to support the glass in accordance with the manufacturer's recommendations.

2. Provide spacers for all glass sizes larger than 50 united inches, to separate glass from stops, except where continuous glazing gaskets or felts are provided.

a. Locate spacers no more than 24" apart, and no closer than 12" to a corner.

b. Place spacers opposite one another.

c. Make bite of spacer on glass 1/4" or more.

D. Set glass in a manner which produces the greatest possible degree of uniformity in appearance, and tight fit.

E. Miter-cut and bond the joints of glazing gaskets in accordance with the manufacturer's recommendations, to provide watertight and airtight seal at corners and other locations where joints are required.

3.3 REPLACEMENT AND CLEANING

A. Upon completion of the glazing work and after the Architect has approved the glass installation, thoroughly clean all glass surfaces and remove paint spots, and other defacements. Do not let cleaning solution etch or stain aluminum, painted or finished surfaces, or affect the glazing compound. Replace cracked, broken, and imperfect glass at no additional cost.

END OF SECTION

SECTION 09 21 16

GYPSUM BOARD ASSEMBLIES

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide gypsum drywall and accessories, and access doors where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Section 06 10 00: Rough Carpentry.

2. Section 09 65 13: Resilient Base and Accessories.

1.2 REFERENCES

A. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.

B. ASTM C1396/C1396M - Standard Specification for Gypsum Board.

C. GA 214 - Recommended Levels of Gypsum Board Finish.

D. GA 216 - Application and Finishing of Gypsum Panel Products.

1.3 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Comply with GA 214 and GA 216.

1.4 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

B. Submit sample of gypsum board finish for Architect’s approval.

1.5 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

B. Store materials inside under cover and keep them dry and protected against damage from weather, condensation, direct sunlight, construction traffic, and other causes. Stack panels flat to prevent sagging.

1.6 GUARANTEE

A. Guarantee the work of this Section for a minimum of one (1) year.

PART 2 - PRODUCTS

2.1 GYPSUM BOARD

A. General:

1. All gypsum board shall be 5/8” thick, Type X.

2. Provide gypsum board complying with ASTM C1396/C1396M in 48" widths and in such lengths as will result in a minimum of joints.

3. Provide standard taper for all gypsum board.

B. Fire-Retardant Board: Provide where indicated and where required for fire resistance rating indicated.

C. Moisture Resistant Gypsum Board: Gold Bond® brand XP® Gypsum Board with Sporgard™ or equal, consisting of a specially treated, fire-resistant gypsum core encased in a heavy mold/mildew/moisture resistant, 100% recycled purple paper on the face side and a heavy, mold/mildew/moisture resistant 100% recycled gray paper on the back side.

D. Manufacturers:

1. National Gypsum Company.

2. Georgia-Pacific Gypsum.

3. USG Corporation.

4. Or equal.

1.2 RELATED MATERALS

A. Metal Trim: Galvanized steel drywall trim and corner bead. Use metal corner bead for all external corners and angles and unequal leg channel-type metal edge trim at all junctions of gypsum board and walls of other materials.

B. Joint Tape: ASTM C475, perforated.

C. Joint Compound: ASTM C475, ready-mixes type. Provide for 3 courses of compound application.

D. Fastening Devices: Use type recommended by gypsum board manufacturer and complying with code.

E. Acoustical Sealant: Latex or acrylic-latex type, permanently elastic and paintable.

1.3 ACCESS DOORS

A. In partitions and ceilings installed under this Section, provide doors where required for access to mechanical installations and electrical installations. Types:

1. Unless otherwise required, provide 24" x 24" metal access doors with concealed hinges to metal frame, and with Allen key lock.

2. For piercing fire-rated surfaces, provide access doors having the same fire rating as the surface being pierced.

3. For tile surfaces and toilet rooms, provide stainless steel access doors and frames, with satin finish.

4. For other installations, provide prime-coated steel access doors and frames for finish painting to be performed at the Job Site under Section 09 90 00 of these Specifications.

1.4 OTHER MATERIALS

A. Provide other materials not specifically described but required for a complete and proper installation, subject to the approval of the Architect.

PART 3 - EXECUTION

3.1 SURFACE CONDTIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 INSTALLATION

A. Install the gypsum board in accordance with the Drawings minimizing the number of end joints.

B. Install the gypsum board with the long dimension of the board at right angles to the supporting members.

C. Make end joints, where required, over framing or furring members.

D. Access Doors: By careful coordination with the trades involved, install the specified access doors where required. Install flush with the finished surface.

3.3 JOINT TREATMENT AND FINISHING

A. Inspect areas to be joint treated, verifying that the gypsum board fits snugly against supporting framework.

B. Apply joint compound in 3 coats; allow thorough drying time and sanding between each coat.

C. Apply compound at all corners and intersections, flanges, penetrations, fastener heads and surface defects.

D. Finish Levels: Achieve the following finish levels in accordance with GA 214 recommendations.

1. Plenum and Concealed Areas: Level 1.

2. Substrate for Acoustical Tile: Level 2.

3. Substrate for Heavy Textured Finish or Heavy Duty Wall Coverings: Level 3.

4. Substrate for Light Texture Wall Covering and Eggshell Paint over Light Texture: Level 4.

5. Substrate for Semi-Gloss and Eggshell: Level 5.

E. Leave all gypsum board surfaces uniformly smooth and in perfect condition for paint.

3.4 CLEANING UP

A. In addition to other requirements for cleaning, use necessary care to prevent scattering gypsum board scraps and dust, and, at completion, pick up and remove from the site all scrap, debris, and surplus material of this Section.

END OF SECTION

SECTION 09 24 23

CEMENT STUCCO

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide exterior lath and plaster where indicated on the Drawings, as specified herein, and as needed for a complete and proper installation including, but not necessarily limited to the following.

1. Metal lath.

2. Portland cement plaster.

B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Section 01 73 29: Cutting and Patching.

2. Section 06 10 00: Rough Carpentry.

3. Section 09 90 00: Painting and Coating.

1.2 REFERENCES

A. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.

B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

C. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar.

D. ASTM C150 - Standard Specification for Portland Cement.

E. ASTM C206 - Standard Specification for Finishing Hydrated Lime.

F. ASTM C926 - Standard Specification for Application of Portland Cement-Based Plaster.

G. ASTM C1063 - Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster.

H. C.B.C. (California Building Code) 2019 Edition.

I. FS UU-B-790A - Building Paper, Vegetable Fiber: (Kraft, Waterproofed, Water Repellent, and Fire Resistant).

J. PCA (Portland Cement Association) - Portland Cement Plaster/Stucco Manual.

1.3 QUALITY ASSURANCE

A. Applicator: Company specializing in performing the work of this Section with minimum five (5) years documented experience, and certified in writing by materials manufacturer.

B. In addition to complying with pertinent codes and regulations of governmental agencies having jurisdiction perform work in accordance with ASTM C926 and PCA's Portland Cement Plaster/Stucco Manual.

C. Coordinate with related work to provide backing support for items mounted on finished surfaces and to provide allowances for pipes and other items in wall cavities.

D. Exterior Lath: Where lath is fastened to horizontal wood supports, comply with CBC requirements.

E. Design Requirements: Provide pre-formulated products that require only addition of clean water for mixing.

1.4 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

B. Samples: Submit samples of the proposed finish, 8"x12" minimum, for approval. Samples shall be representative of texture, color, and proposed workmanship. Maintain reviewed samples on Project Site for reference.

C. Shop Drawings: Submit elevations and details indicating locations and types of components, splices, connections and accessory items. Indicate locations and types of framing substrates.

D. Product Data: Submit manufacturer's catalog data for each material and component proposed for installation.

E. Certificates: Furnish manufacturer's certification that materials meet or exceed Specification requirements.

1.5 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

B. Protect metal lathing and plastering materials before, during and after installation. In event of damage immediately provide required repairs and replacements.

C. Deliver and store portland cement materials on the Project Site in a manner to provide protection from exposure and damage by moisture. Pile materials to permit easy access for proper inspection and identification of each shipment. Stockpile adequate supplies of sand on the Project Site to permit sampling and testing before installation. Store to avoid inclusion of foreign material.

D. Deliver stucco to the Project Site in manufacturer's sealed and labeled packages.

E. Each bundle of lath shall be sealed with a metal tag bearing the lath designation, weight and manufacturer's name.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Expanded Metal Lath:

1. ASTM C1063, small diamond mesh expanded metal lath, 3.4 pounds per square yard, expanded from steel sheets with hot-dip galvanized coating G60 in accordance with ASTM A653.

2. Lath shall be self-furring type for installation over sheathing, flat type for installation over spaced framing, and 3/8 inch ribbed lath for soffits.

B. Backing for Metal Lath:

1. Reinforced, laminated water resistant paper backing conforming to FS UU-B-790A, Type 1, Grade D, Style 2.

2. Furnish for exterior plastering (except on soffits), and for mortar-set ceramic wall tile.

3. Furnish on wood studs without sheathing, and on plywood sheathing; Super Jumbo Tex 60 Minute manufactured by Fortifiber® Building Systems Group.

C. Corner and Strip Reinforcing Lath: Flat or shaped lath reinforcing units, galvanized metal or wire lath types, no less than 2.5 pounds per square yard, outstanding legs minimum of 2 inches for wire lath and 3 inches for metal lath when formed for angle reinforcing. Furnish galvanized type for installation with galvanized metal lath.

D. Plastering Accessories: Minimum 26 gage galvanized steel with expanded wings. PVC and zinc alloy are not permitted. Furnish casing beads, expansion screeds, foundation screeds, ventilating screeds and other items as indicated or required.

1. Exterior Expansion Screeds: Sizes and profiles indicated or required, furnished with expanded wings unless otherwise indicated or required by installation.

2. Drip Screed: Minimum 26 gage galvanized steel with ground and holes to allow for drainage, No. 10 Drip.

3. Casing Beads: Milcor, Superior, USG, or equal, similar to Milcor Type 66 by 7/8 inch high, for exterior plaster.

4. Exterior Corner Reinforcement: Woven wire type with longitudinal wires, galvanized.

5. Ventilating Screeds: Alabama Metal Industries, or equal, soffit vent screed, perforated web type, with integral plaster grounds.

6. Foundation Weep Screeds: Alabama Metal Industries, or equal, integral plaster ground and weep screed.

7. Aluminum Plaster Reglets: Match existing, as shown on Drawings.

E. Screws: Type S and Type S12, "ClimaSeal" finish.

F. Wire for fastening lath together and fastening corner beads, metal grounds and base screeds to lath and framing shall be 18 gage, galvanized conforming to ASTM A641.

G. Nails: 11 gage roofing nails, 7/16 inch head, barbed, diamond point, zinc-coated, 1-1/2 inch long for horizontal application; 1 inch long for vertical application. Furnish watered furring nails for fastening lath to wood framing.

2.2 PLASTER MATERIALS

A. Exterior Stucco: As manufactured by LaHabra or Merlex Stucco, or equal. Furnish formulations requiring only addition of water for installation. Sand shall pass the No. 20 sieve. Mix and sand shall provide the specified finish. Furnish integral colored stucco in color as selected by Architect.

B. Portland Cement: ASTM C150, Type II, low alkali.

C. Hydrated Lime: ASTM C206, Type S.

D. Finish Coat Plaster: LaHabra "Cementitious Exterior Stucco" or equal, factory formulated blend of portland cement, hydrated lime, aggregates and color, requiring addition of water only at the Project Site. Color as selected by Architect.

E. Water: Clean, potable and from domestic source.

F. Sand: Washed natural sand conforming to ASTM C144, except gradation of sand shall be as follows:

Percentage retained, each sieve, by weight:

Sieve Size	Maximum	Minimum
No. 4	0	0
No. 8	10	0
No. 16	40	10
No. 30	65	30
No. 50	90	70
No. 100	100	95

2.3 OTHER MATERIALS

A. Provide other materials, not specifically described but required for a complete and proper installation, subject to the approval of the Architect.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

B. Verify that overhead or concealed work is finished, completed, tested and inspected as required before starting work of this Section.

C. Before installing any plaster, thoroughly protect other adjacent work.

3.2 LATH INSTALLATION

A. General: Where exterior lath is fastened to horizontal wood supports, CBC shall be complied with.

B. Exterior Lathing, General:

1. Application of Metal Lath: Metal lath or wire fabric lath shall be installed in accordance with the provisions of CBC. Lath shall be furred out from vertical supports or backing not less than 1/4 inch.

2. Self-furring lath shall meet furring requirements. Furring of expanded metal lath is not required on supports providing a bearing surface width of 1-5/8 inch or less.

3. Where external corner reinforcement is not installed, lath shall be furred out and carried around corners, extending and fastened to at least one support.

4. A weep screed shall be provided at or below foundation plate line on exterior stud walls. Screed shall be installed a minimum of 4 inches above grade and shall be of a type permitting water to drain to exterior of building. Weather-resistant barrier and exterior lath shall cover and terminate on attachment flange of screed.

3.3 PLASTER APPLICATION - GENERAL

A. Install plaster in conformance with ASTM C926 and PCA’s Portland Cement Plaster/Stucco Manual.

B. Install each plaster coat to an entire wall without interruption to avoid cold joints and abrupt changes in uniform appearance of succeeding coats. Wet plaster shall abut existing plaster at naturally occurring interruptions in plane of plaster (such as corner angles, openings and control joints) wherever possible. Cut

joining, where necessary, square and straight and at least 6 inches away from a joining in preceding coat.

C. Provide sufficient moisture in plaster mix or by curing methods to permit continuous and complete hydration of cementitious materials, considering climatic and Project Site conditions.

D. Provide sufficient time between coats to permit each coat to cure or develop enough rigidity to resist cracking or other damage when next coat is installed.

3.4 EXTERIOR PLASTERING

A. Preparation of Surfaces: Verify that lath has been installed securely and that grounds, screeds, casing beads and other accessories are straight, in correct position, and securely fastened in place.

B. Proportions:

1. Proportion ingredients for Portland cement. Calibrated boxes are required to determine the accuracy of proportioning. Proportions shall adhere to current edition of CBC.

2. Bond Coat: Proportions shall adhere to current edition of CBC.

3. Stucco Finish: Stucco shall be factory prepared, exterior type, colored stucco containing a portland cement base, required aggregates and mineral pigments.

C. Mixing: Provide stucco mix, plaster and aggregate in proportions specified, furnishing only sufficient water to obtain proper consistency before installation. Do not mix any more material at any time than can be installed within 1/2 hour after mixing. Do not allow material to remain in mixer or mixing boxes overnight. Maximum allowable slump shall be 2-1/2 inch, based on a 2 inch x 4 inch x 6 inch slump cone.

D. Apply exterior cement plaster (stucco) in three-coat work to a minimum of 7/8" thickness and finish texture matching the approved sample.

1. Scratch Coat: Apply to a minimum of 3/8" thick, completely embedding the lath. Cure and dry a minimum of 3 days before applying brown coat. Keep scratch coat moist a minimum of 4 days.

2. Brown Coat: Apply brown coat to scratch coat, bringing out to grounds, flat to true surface, and free of imperfections which would reflect in finish coat. Apply to a minimum thickness of 1/4" to 3/8" in two applications and bring to a true, even place by rodding and floating. Leave rough ready to receive finish coat. Dampen scratch coat before applying brown coat. Dry brown coat a minimum of 7 days. Keep brown coat moist a minimum of 48 hours.

3. Integral Color Finish Coat: Medium float. Lay out to permit completion of entire surface in one operation.

E. Curing Exterior Plaster: Adhere to current edition of CBC for curing requirements.

3.5 QUALITY CONTROL

A. Finish exterior plaster to a uniform texture, free of imperfections and flat within 1/8 inch in 5 feet. Form a suitable foundation for paint and other finishing materials. Avoid joining marks in finish coats.

3.6 CLEANING AND PROTECTION

A. Protect adjacent surfaces of the building from spattering or staining. Thoroughly clean any spattered or stained surfaces to Architect's approval.

B. Protect all plaster from subsequent construction and finishing activities, and maintain protection until acceptance of building.

C. Remove rubbish, debris and waste material and legally dispose of off the Project site.

END OF SECTION

SECTION 09 30 13

CERAMIC TILING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide ceramic tile where shown on the Drawings, as specified herein, and as needed for a complete and proper installation including the following.

1. Stone thresholds.

2. Precast shower pans.

B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Structural Drawings: Cast-In-Place Concrete.

2. Section 07 92 00: Joint Sealants.

3. Section 09 21 16: Gypsum Board Assemblies.

1.2 REFERENCES

A. ANSI A137.1 - American National Standard Specifications for Ceramic Tile.

B. ANSI A108/A118/A136.1 - American National Specifications For The Installation Of Ceramic Tile.

C. ASTM C241/C241M - Standard Test Method for Abrasion Resistance of Stone Subjected to Foot Traffic.

D. ASTM C503/C503M - Standard Specification for Marble Dimension Stone.

E. ASTM C1353/C1353M - Standard Test Method for Abrasion Resistance of Dimension Stone Subjected to Foot Traffic Using a Rotary Platform Abraser.

F. TCNA - (Tile Council of North America) Handbook for Ceramic, Glass, and Stone Tile Installation.

1.3 QUALITY ASSURANCE

A. Source Limitations for Tile:

1. Obtain all tile of same type and color or finish from one source or producer.

2. Obtain tile from same production run and of consistent quality in appearance and physical properties for each contiguous area.

B. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from a single manufacturer and each aggregate from one source or producer.

C. Source Limitations for Other Products: Obtain each of the following products specified in this Section through one source from a single manufacturer for each product:

1. Stone thresholds.

2. Precast shower pans.

D. Pre-installation Conference: Conduct conference at Project Site to comply with City's administrative requirements.

1.4 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

B. Product Data: For each type of product indicated.

C. Manufacturer's specifications and installation instructions.

D. Shop Drawings: Show locations of each type of tile and tile pattern. Show widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.

E. Samples for Verification:

1. Full-size units of each type and composition of tile and for each color and finish required.

2. Assembled samples with grouted joints for each type and composition of tile and for each color and finish required, at least 12 inches square and mounted on rigid panel. Use grout of type and in color or colors approved for completed work.

3. Full-size units of each type of trim and accessory for each color and finish required.

4. Stone thresholds in 6-inch lengths.

1.5 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

B. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirement in ANSI A137.1 for labeling sealed tile packages.

C. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.

D. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

E. Store liquid latexes in unopened containers and protected from freezing.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Do not install tile until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

1.7 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Tile and Trim Units: Furnish twenty (20) pieces of full-size units for each type, composition, color, pattern, and size indicated.

PART 2 - PRODUCTS

2.1 PRODUCTS, GENERAL

A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1 for types, compositions, and other characteristics indicated.

1. Provide tile complying with Standard grade requirements, unless otherwise indicated.

B. Colors, Textures, and Patterns: Where manufacturer's standard products are indicated for tile, grout, and other products requiring selection of colors, surface textures, patterns, and other appearance characteristics, provide specific products or materials matching Architect's samples.

C. Factory Blending: For tile exhibiting color variations within ranges selected during Sample submittals, blend tile in factory and package so tile units taken from one package show same range in colors as those taken from other packages and match approved Samples.

2.2 CERAMIC TILE

A. Provide ceramic tile and accessories complying with ANSI A137.1, in colors and patterns selected by the Architect from standard colors and patterns of the approved manufacturers.

B. Include stops, returns, trimmers, caps, and special shapes required to produce complete and neatly finished installations. Provide cove trim at intersection of walls and floors and surfaces, bullnose top at base and wainscot.

C. Wall Tile at Restrooms: Glazed ceramic tile, 6” x 6”, radiused edges where noted, manufactured by Dal-Tile, or equal products approved in advance by the Architect. Price Group 3, 2 colors / random pattern.

D. Shower Wall Tile: Glazed ceramic tile, 6” x 6”, radiused edges where noted, manufactured by Dal-Tile, or equal products approved in advance by the Architect. Price Group 3, 2 colors / random pattern.

E. Base Tile: 6" high coved based type.

F. Soap Dish: Provide one ceramic tile soap dish at each shower.

2.3 THRESHOLDS

A. Fabricate to sizes and profiles indicated or required to provide transition between adjacent floor finishes.

B. Bevel edges at 1:2 slope, aligning lower edge of bevel with adjacent floor finish. Limit height of bevel to 1/2 inch or less, and finish bevel to match face of threshold.

C. Marble Thresholds: ASTM C503 with a minimum abrasion resistance of 10 per ASTM C1353 or ASTM C241 and with honed finish. Provide uniform, fine- to medium-grained white stone with gray veining.

2.4 PRECAST SHOWER PANS

A. Provide Stern-Williams precast terrazzo Parian series shower floors or equal, at all shower areas.

B. Provide roll-in design at ADA accessible showers.

2.5 SETTING MATERIALS

A. Comply with pertinent recommendations contained in the TCNA Handbook for Ceramic, Glass, and Stone Tile Installation.

B. Latex-Portland Cement Mortar: Provide a commercially prepared mixture of Portland cement for use as a bond coat for setting tile, complying with ANSI A108.1.

C. For wall applications, provide nonsagging mortar that complies with requirements in ANSI A118.4.

D. Organic Adhesive: Comply with ANSI A136.1.

2.6 GROUT

A. Comply with pertinent recommendations contained in the TCNA Handbook for Ceramic, Glass, and Stone Tile Installation in colors selected by the Architect from standard colors available from the approved manufacturers.

B. Commercial Portland Cement Grout: Provide a commercially prepared mixture of Portland cement and other ingredients producing a water-resistant, dense, uniformly colored material, conforming to ANSI A108.1. Color as approved by Architect.

2.7 OTHER MATERIALS

A. Provide other materials, not specifically described but required for a complete and proper installation, subject to the approval of the Architect.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected and approved.

3.2 INSTALLATION

A. General:

1. Comply with ANSI A108.1 and the TCNA Handbook for Ceramic, Glass, and Stone Tile Installation.

2. Comply with manufacturer's instructions for installation and application of materials.

3. Provide mortar bed for all wall tile.

B. Limits of Tile:

1. Extend tile into recesses and under equipment and fixtures to form a complete covering without interruptions.

2. Terminate tile neatly at obstructions, edges, and corners, without disruption of pattern or joint alignment.

C. Joining Pattern:

1. Lay tile in grid pattern unless otherwise indicated on the Drawings or directed by the Architect.

2. Align joints when adjoining tiles on base, trim, and walls are the same size.

3. Layout tile work, and center the tile fields both directions in each space or on each wall area.

4. Adjust to minimize tile cutting.

5. Provide uniform joint widths.

D. Provide expansion and control joints where shown on the Drawings, and where otherwise recommended by the TCNA Handbook for Ceramic, Glass, and Stone Tile Installation, sealing in accordance with Section 07 92 00 of these Specifications.

E. Set shower floor on a level grout or mortar bed. Depress floor slab as required.

3.3 CLEANING AND PROTECTION

A. Upon completion of placing and grouting, clean the work of this Section in accordance with recommendations of the manufacturers of the materials used.

B. Protect metal surfaces, cast iron, and vitreous items from effects of acid cleaning.

C. Flush surfaces with clean water before and after cleaning.

D. Provide tile surfaces clean and free from cracked, broken, chipped, unbonded, and otherwise defective units.

E. Provide required protection of tile surfaces to prevent damage and wear prior to acceptance of the work by the City.

END OF SECTION

SECTION 09 51 13

ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide acoustical ceilings where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Section 07 21 16: Blanket Insulation.

2. Mechanical Drawings: Heating, Ventilation and Air Conditioning.

3. Electrical Drawings: Lighting.

1.2 REFERENCES

A. ASTM C635/C635M - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.

B. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels.

C. UL - Underwriters Laboratories, Inc.

1.3 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1.4 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

B. Product Data: Manufacturer's specifications and shop drawings in sufficient detail to show suspension, layout, lateral restraint, installation, anchorage, and interface of the work of this Section with the work of adjacent trades.

C. Samples of panels and suspension system for Architect's approval.

1.5 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

1.6 COORDINATION

A. Coordinate layout and installation of acoustical panels and suspension system with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, and fire-suppression system.

1.7 EXTRA MATERIALS

A. Deliver to the City for use in future modifications, an extra stock of one (1) sealed unopened box of each type of acoustical tile installed, packaged, marked, and adequately protected against deterioration.

PART 2 - PRODUCTS

2.1 "T" GRID SYSTEM

A. Provide a complete system of supporting members, anchors, wall cornices, adapters for light fixtures, ceiling fans and grilles, and accessories of every type required for a complete suspended "T" grid system of the arrangements shown on the Drawings, in color or colors selected by the Architect from standard colors of the approved manufacturer, and complying with pertinent UL requirements and governmental agencies having jurisdiction.

B. Acceptable Products: Silhouette XL 9/16” Bolt-Slot grid system with 1/8” reveal as manufactured by Armstrong, or equal. ASTM C635 heavy-duty main beam classification, commercial-quality hot dipped galvanized steel. Entire surface shall be chemically cleansed and prefinished in baked polyester paint.

2.2 ACOUSTICAL CEILING PANELS

A. Acceptable Products: 24” x 24” Dune Tegular Fine Texture as manufactured by Armstrong, or equal.

2.3 OTHER MATERIALS

A. Provide other materials not specifically described but required for a complete and proper installation, subject to the approval of the Architect.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 INSTALLATION, GENERAL

A. Install "T" grid suspension system and acoustical ceiling panels in accordance with ASTM C636 and the pertinent UL design requirements, providing lateral bracing as required by pertinent codes and regulations.

B. Install suspension system with joints accurately aligned, flush and tight, producing rigid support for the acoustical units and other items mounted in the system.

C. Provide visual continuity between adjacent rooms or areas for "T" grid system, as shown on the Drawings.

D. Make grid level within a tolerance of one in 1000 and straight within a tolerance of one in 1000.

E. Pattern Direction: One-Way throughout.

3.3 CLEANING UP

A. In addition to other stipulated requirements for cleaning, completely remove fingerprints and traces of soil from the surfaces of grid and acoustical materials, using only those cleaning materials recommended for the purpose by the manufacturer of the material being cleaned.

END OF SECTION

SECTION 09 65 13

RESILIENT BASE AND ACCESSORIES

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide resilient rubber cove base and accessories where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Structural Drawings: Cast-In-Place Concrete - Concrete floor substrate surface.

2. Section 03 54 14: Cementitious Self-Leveling Underlayment.

3. Section 09 21 16: Gypsum Board Assemblies.

1.2 REFERENCES

A. ASTM D2240 - Standard Test Method for Rubber Property--Durometer Hardness.

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

C. ASTM E648/NFPA 253 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.

D. ASTM E662 - Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials.

E. ASTM F1861 - Standard Specification for Resilient Wall Base.

1.3 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Product Performance Requirements:

1. Hardness: ASTM D2240, 85 Shore A.

2. Flexibility: Will not crack, break, or show any signs of fatigue when bent around a 1/4” (6.4 mm) diameter cylinder.

3. Dimensional and Performance Requirements: Meets or exceeds the dimensional and performance requirements for light/heat aging, chemical resistance and dimensional stability when tested in accordance with ASTM F1861.

4. Fire Resistance:

   a. ASTM E648/NFPA 253 (Critical Radiant Flux) - Class 1.

   b. ASTM E84 - Class C.

   c. ASTM E662 (Smoke Density) - 450 or less.

1.4 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

B. Product Data: For each type of product indicated.

C. Samples: For each type of product indicated, in manufacturer's standard-size samples but not less than 12 inches long, of each resilient product color, texture, and pattern required.

1.5 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

B. Deliver and store materials in manufacturer's cartons or wrappings, keeping products clean, dry and protected from physical damage.

C. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg. F or more than 90 deg. F.

1.6 PROJECT CONDITIONS

A. Maintain temperatures within range recommended by manufacturer.

B. Install resilient products after other finishing operations, including painting, have been completed.

1.7 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Rubber Base and Accessories: Furnish not less than twenty (20) linear feet of rubber base and no less than four (4) outside and four (4) inside corners, for each type, color, and size indicated.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Provide Burkebase Premium TS Molded Wall Base as manufactured by Mannington Commercial, or equal.

1. Rubber: Type TS - Thermoset Rubber, Group I (solid).

2. Colors and Patterns: As selected by Architect from manufacturer's full range.

3. Style: Cove (with top-set toe).

4. Dimensions: 0.125 inch minimum thickness, 48 inches long or manufacturer's standard length coils, height as indicated on Drawings.

5. Inside and Outside Corners: Premolded.

6. Surface: Matte Finish.

B. Adhesives: Water-resistant type recommended by manufacturer to suit resilient products and substrate conditions indicated.

C. Provide other materials not specifically described but required for a complete and proper installation, subject to the approval of the Architect.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.

B. Do not begin rubber wall base installation until the work of all other trades has been completed, especially overhead trades.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 SURFACE PREPARATION

A. Prepare substrates according to manufacturer's written recommendations to assure adhesion of resilient products.

3.3 RESILIENT WALL BASE INSTALLATION

A. Apply wall base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.

B. Install wall base in lengths as long as practicable without gaps at seams and with tops of adjacent pieces aligned.

C. Tightly adhere wall base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.

D. Do not stretch wall base during installation.

E. Premolded Corners: Install premolded corners before installing straight pieces.

3.4 CLEANING AND PROTECTION

A. Perform the following operations immediately after completing resilient product installation:

1. Remove adhesive and other blemishes from exposed surfaces.

2. Sweep and vacuum surfaces thoroughly.

3. Damp-mop surfaces to remove marks and soil. Do not wash surfaces until after time period recommended by manufacturer.

B. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period. Use protection methods recommended in writing by manufacturer.

END OF SECTION

SECTION 09 90 00

PAINTING AND COATING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Paint and finish the exterior and interior exposed surfaces listed on the Painting Schedule in Part 3 of this Section, as specified herein, and as needed for a complete and proper installation.

B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

C. Work Not Included:

1. Unless otherwise indicated, painting is not required on surfaces in concealed areas such as furred spaces, and duct shafts.

2. Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze, and similar finished materials will not require painting unless specified.

3. Do not paint moving parts of operating units; mechanical or electrical parts such as valve operators; linkages; sensing devices; and motor shafts, unless otherwise indicated.

4. Do not paint over required labels or equipment identification, performance rating, name, or nomenclature plates.

D. Definitions: "Paint," as used herein, means coating systems materials including primers, emulsions, epoxy, enamels, sealers, fillers, and other applied materials whether used as prime, intermediate, or finish coats.

1.2 QUALITY ASSURANCE

A. Installer Qualifications: A company specializing in the installation of specified products for at least five (5) years, and approved by the manufacturer.

B. Paint Coordination:

1. Provide finish coats which are compatible with the prime coats actually used, assuring compatibility of the total coating system for the various substrata.

2. Provide barrier coats over noncompatible primers, or remove the primer and reprime as required.

C. Regulatory and Code Requirements:

1. Provide and install coatings in accordance with requirements of local, regional, state and federal air quality standards.

2. Provide coatings that comply with regulatory requirements for flame spread and smoke developed.

D. Comply with the Concrete Information Booklet, "Painting Concrete, PCA IS134", by the Portland Cement Association.

E. Prepare substrates in accordance with recommendations of the Society for Protective Coatings (SSPC), as a minimum requirement.

F. Source Limitations: Obtain products or materials through one source from a single manufacturer where indicated to be of same type of finish.

1.3 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents. Include location (interior/exterior) each paint is used with each submittal.

B. Materials list, manufacturer's specifications and other data needed to prove compliance with the specified requirements.

C. Samples:

1. Following the selection of colors and glosses by the Architect, submit samples for the Architect's review.

a. Provide three 8"x10" samples of each color and each gloss for each material on which the finish is specified to be applied.

b. Submit samples during progress of the work of actual application of the approved materials on actual surfaces to be painted, as directed by the Architect.

2. Resubmit samples as requested until the required gloss, color, and texture is achieved.

3. Do not commence finish painting until approved samples are on file at the Job Site.

1.4 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

1.5 JOB CONDITIONS

A. Comply with manufacturer's printed instructions for acceptable air temperature and surface temperature conditions for paint application.

B. Comply with manufacturer's printed instructions regarding weather conditions and humidity for paint application.

1.6 WARRANTIES

A. Provide for repairing paint which fails due to adhesion to substrate, moisture in substrates, material quality and installation. Include coverage for abrasion resistance, adhesive failure, fading, chalking, color change or degradation of finish appearance.

1. Warranty Period: Five years.

1.7 EXTRA MATERIALS

A. Upon completion of the work of this Section, deliver to the City an extra stock equaling one (1) gallon of each color, type, and gloss of paint used in the Work, tightly sealed in unopened containers. Clearly label each container with project name, gloss, type of paint, color formula and Architect's color number or designation indicated on Drawings. Paint top of paint cans with color of contents.

PART 2 - PRODUCTS

2.1 PAINT MATERIALS

A. Architectural Opaque Finishes: Provide equal finishes as scheduled by Sherwin-Williams, Dunn Edwards, or Pratt & Lambert.

1. The Painting Schedule in Part 3 of this Section is based on products of Sherwin-Williams.

2. Paints shall be top quality, meeting or exceeding appropriate federal specification and satisfying all Torrance Fire Department requirements.

3. All paint work shall be minimum 3 coats after proper preparation as recommended by manufacturer.

B. Protective Coatings: Provide equal products by Sherwin-Williams, Dunn Edwards or Pratt & Lambert.

C. Undercoats and Thinners: Provide coordination between paint coats and, insofar as practicable, use under coat, finish coat, and thinner materials as parts of a unified system of paint finish, produced by the same manufacturer.

2.2 APPLICATION EQUIPMENT

A. For application of the approved paint, use equipment recommended by the manufacturer, verifying compatibility with the material and desired finish.

2.3 OTHER MATERIALS

A. Provide other materials, not specifically described but required for a complete and proper installation, subject to the approval of the Architect.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 MATERIALS PREPARATION

A. Mix, prepare and store paint materials in strict accordance with the manufacturer’s recommendations.

3.3 SURFACE PREPARATION

A. General:

1. Perform preparation and cleaning procedures in strict accordance with the paint manufacturer’s recommendations for each substrate condition.

2. Remove items which are not scheduled to receive paint finish; or provide surface-applied protection. Reinstall the removed items following completion of painting.

3. Verify that all surfaces are completely dry before painting.

B. Prepare wood surfaces exposed to view, using the proper sandpaper to produce a uniformly smooth wood surface.

C. Preparation of Metal Surfaces:

1. Thoroughly clean surfaces until free from dirt, oil, and grease.

2. Apply an acid each wash to galvanized surfaces to be painted.

3.4 PAINT APPLICATION

A. General:

1. Paint schedule indicates the minimum number and thickness of coatings required. Provide additional coats if required to produce proper adhesion or full coverage.

2. Provide paint sheens and stains per Finish Schedule.

3. Apply paint in accordance with manufacturer's directions, using applicators and techniques best suited for materials and surfaces to which applied.

4. On metal and wood surfaces, sand and dust between coats to remove defects visible to the unaided eye from a distance of five feet.

5. On removable panels and hinged panels, paint the back sides and jambs to match the exposed sides.

6. Allow sufficient drying time between coats, as recommended by the material manufacturer.

7. Paint all exposed surfaces of every member. Prime all sides, edges and cut ends.

8. Cloudiness, spotting, brush marks, runs, sags, and other surface imperfections will not be acceptable.

9. Match the approved Samples as to texture, color, and coverage. Remove, refinish, or repaint work not in compliance with the specified requirements.

B. Miscellaneous Surfaces and Procedures:

1. Exposed Mechanical Items:

a. Finish electric panels, access doors, conduits, pipes, ducts, grilles, registers, vents, and items of similar nature to match the adjacent wall and ceiling surfaces, or as directed.

b. Paint visible duct surfaces behind vents, registers, and grilles flat black.

c. Wash metal with solvent, prime, and apply two coats of alkyd enamel.

2. Exposed Pipe and Duct Insulation: Apply one coat of latex paint on insulation which has been sized or primed under other Sections; apply two coats on such surfaces when unprepared, matching color of adjacent surfaces.

3. Wet Areas:

a. In toilet rooms and contiguous areas, add an approved fungicide to paints.

b. For oil base paints, use 1% phenolmercuric or 4% tetrachlorophenol.

c. For water emulsion and glue size surfaces, use 4% sodium tetrachlorophenate.

4. Interior: Use "smooth" finish where enamel is specified.

5. Exposed Vents: Apply two coats of heat-resistant paint approved by the Architect.

3.5 PROTECTION AND CLEAN UP

A. Protect the work and adjacent surfaces with suitable coverings.

B. Remove all paint spills or spatters immediately.

C. Broom clean all surfaces, removing from the site all scraps and other debris from this work.

3.6 PAINTING SCHEDULE

A. Exterior Paint Systems:

1. Exterior Cement Plaster and Concrete - 100% Acrylic Flat:

   a. 1st coat: S-W Loxon Concrete and Masonry Primer Sealer

   b. 2nd coat: S-W A-100 Exterior Latex Flat

   c. 3rd coat: S-W A-100 Exterior Latex Flat

2. Ferrous Metal - Acrylic Semi-Gloss:

   a. 1st Coat: S-W Pro Industrial Pro-Cryl Universal Acrylic Primer (touch up bare metal only if surface is shop primed)

   b. 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss

   c. 3rd Coat: S-W Pro Industrial Acrylic Semi-Gloss

3. Galvanized Metal - Acrylic Semi-Gloss:

   a. 1st Coat: S-W Pro Industrial Acrylic Semi-Gloss

   b. 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss

4. Wood - Acrylic Flat:

   a. 1st Coat: S-W Exterior Latex Wood Primer

   b. 2nd Coat: S-W A-100 Exterior Latex Flat

   c. 3rd Coat: S-W A-100 Exterior Latex Flat

B. Interior Paint Systems:

1. Ferrous Metal - Acrylic Semi-Gloss:

   a. 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer (touch up bare metal only if surface is shop primed)

   b. 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss

   c. 3rd Coat: S-W Pro Industrial Acrylic Semi-Gloss

2. Gypsum Drywall - Eggshell Acrylic:

   a. 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer

   b. 2nd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel

   c. 3rd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel

3. Wood - Clear Satin Finish:

   a. 1st Coat: S-W Minwax Professional Formula Sanding Sealer

   b. 2nd Coat: S-W Minwax Waterbased Oil-Modified Polyurethane

   c. 3rd Coat: S-W Minwax Waterbased Oil-Modified Polyurethane

   d. 4th Coat: S-W Minwax Waterbased Oil-Modified Polyurethane

4. Wood - Eggshell:

   a. 1st Coat: S-W PrepRite ProBlock Interior/Exterior Latex Primer/Sealer

   b. 2nd Coat: S-W Pro Industrial Acrylic Eg-Shel

   c. 3rd Coat: S-W Pro Industrial Acrylic Eg-Shel

3.7 INSPECTION

A. Upon completion of the work of this Section, accompany the Architect and City for a detailed inspection of the completed work, correcting any deficiencies to their approval.

END OF SECTION

SECTION 10 14 00

SIGNAGE

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide identifying devices where shown on the Drawings, as specified herein, and as needed for a complete and proper installation including, but not necessarily limited to the following.

1. Toilet room signs.

2. Accessibility symbols.

3. Parking area signs.

B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Section 32 17 23.13: Painted Pavement Markings.

1.2 REFERENCES

A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

1.3 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Installer Qualifications: An employer of workers trained and approved by signage manufacturer.

C. Source Limitations: Obtain each sign type through one source from a single manufacturer.

1.4 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

B. Product Data:

1. Submit materials list, manufacturer's specifications and other data.

2. Submit details of installation and anchorage sufficient to enable proper interface of the work of this Section with the work of other trades.

C. Submit sample letter, full size, showing finish and mounting method proposed. Approved sample will be returned and may be used in the building. Submit letter spacing template for Architect's approval.

1.5 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Standard products manufactured by one of the following:

1. ASI Sign Systems, Inc., Culver City, California.

2. Gemini Incorporated, Cannon Falls, Minnesota.

3. Or equal.

B. Provide all products from a single manufacturer, unless otherwise approved by the Architect.

2.2 TOILET ROOM ACRYLIC SIGNS

A. Provide ASI series "EmBoss" toilet room sign or equal, for latch side of door with the following attributes:

1. Size 6" x 6".

2. Type Style: "Helvetica".

3. Plaque Color: Black.

4. Type Color: White.

5. Frame Finish: Black.

6. Margins: Center/Center.

7. Mounting: Adhesive.

8. Messages: RESTROOM MEN and RESTROOM WOMEN.

9. Braille.

B. Provide ASI series "SQM" toilet room door sign or equal, with the following attributes:

1. Blue, 1/4" thick acrylic with international male (12" equilateral triangle) and female (12" diameter circle) symbols (white) and handicap symbols (white), subsurface silkscreen graphics, backpainted.

2. Mounting: Adhesive.

3. Message: RESTROOM (unisex pictogram with accessibility symbol).

2.3 ACCESSIBILITY SYMBOLS

A. Provide ASI series "SPJ" accessibility symbols, or equal, with the following attributes:

1. Size 6" x 6".

2. Plaque Color: Blue.

3. Wheelchair Symbol Color: White.

4. Margins: Center/Center.

5. Mounting: Adhesive.

6. Thickness: 0.125 matte finished acrylic.

2.4 PARKING AREA SIGNS

A. Van Accessible Signs: Minimum 16 gage steel sheets with reflectorized porcelain white beaded baked enamel, International Symbol of Accessibility on blue background. Refer to Drawings for dimensions and details.

B. Reserved Parking Signs: Minimum 16 gage steel sheets with reflectorized porcelain white and green beaded baked enamel. Refer to Drawings for dimensions and details.

C. Parking Lot Entrance Signs: An additional sign shall also be posted, in a conspicuous place, at each entrance to off-street parking facilities, or immediately adjacent to and visible from each stall or space. The sign shall be not less than 17 inches by 22 inches in size lettering not less than 1 inch in height, (helvetica medium) which clearly and conspicuously states the following:

"Unauthorized vehicles parked in designated accessible spaces not displaying distinguished placards or license plates issued for persons with disabilities may be towed away at owner's expense. Towed vehicles may be reclaimed at _____ or by telephoning _____,"

Blank spaces shall be filled in with appropriate information as permanent part of the sign.

D. Posts: Secure post-mounted signs to 1-5/8" x 1-5/8" x 10' x 12 gage wall thickness, perforated square tubing, cold-formed carbon steel galvanized (conforming to ASTM A653), Telestrut Tubing P9000 as manufactured by Unistrut Corporation, or equal. Perforated pre-punched holes are to be 9/16" diameter, spaced 1-7/8" on center. Provide anchors and anchor sleeves for a complete installation.

E. Pavement Symbols: Refer to Section 32 17 23.13.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

B. Install the work of this Section in strict accordance with the manufacturer's recommendations as approved by the Architect, using only the approved mounting materials, and locating all components firmly into position, level and plumb.

C. Exerior Parking Signage Installation:

1. Posts: Insert posts minimum 1'-4" deep. Check each post for plumb, and vertical and top alignment. Surrounding paving shall be domed to shed water.

2. Signs: Mount signs in accordance with Drawing Details. Mount hancdicapped signs at height to comply with accessibility codes.

3.2 CLEANUP

A. Remove excess materials and waste from the Site.

END OF SECTION

SECTION 10 28 13

TOILET ACCESSORIES

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide toilet room accessories where indicated on the Drawings, as specified herein, and as needed for a complete and proper installation.

B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Section 06 10 00: Rough Carpentry.

2. Section 09 21 16: Gypsum Board Assemblies.

3. Section 09 30 13: Ceramic Tiling.

1.2 REFERENCES

A. ADAAG (Americans with Disabilities Act Accessibility Guidelines) for Buildings and Facilities.

B. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

C. ASTM A269/A269M - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.

D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

E. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.

F. ASTM B456 - Standard Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium.

G. ASTM C1036 - Standard Specification for Flat Glass.

H. C.B.C. (California Building Code) 2019 Edition.

I. FS A-A-3002 - Mirrors, glass.

1.3 QUALITY ASSURANCE

A. Qualifications:

1. Manufacturer: Company specializing in manufacturing the products specified in this Section with minimum 5 years documented experience.

2. Installer: Company specializing in performing the work of this Section with minimum three years documented experience, and approved by the manufacturer.

B. Single Source Responsibility: Provide products or materials from the same manufacturer.

1.4 REGULATORY REQUIREMENTS

A. Conform to Part 2, Title 24, California Code of Regulations for access for the handicapped.

1.5 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

B. Product Data: Submit manufacturer's data, such as technical literature, brochures, specifications, material lists and product design criteria.

C. Shop Drawings: Indicate locations and types of accessories with plans and elevations. Indicate mounting heights to accessible controls. Show relationship with adjacent finishes, such as grout joints and tile patterns.

D. Samples: Minimum size: 4 inches x 4 inches, or 4 inches in length. Submit Samples of exposed finishes, such as face plates, exposed trim, knobs or levers.

1.6 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

B. Deliver, store and handle in accordance with manufacturer's recommendations.

1.7 WARRANTY

A. Manufacturer's Mirror Warranty: Written warranty, executed by manufacturer agreeing to replace welded stainless steel-framed mirrors that develop visible silver spoilage defects within five (5) years from date of Substantial Completion.

B. Manufacturer's Finish Warranty: Written warranty, executed by manufacturer agreeing to replace toilet accessories that develop corrosion or degradation of finish within five (5) years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Keys: Provide 3 keys for each accessory.

B. Stainless Steel Sheet: ASTM A666, type 304.

C. Stainless Steel Tubing: ASTM A269, stainless steel.

D. Galvanized Sheet Steel: ASTM A653, G60.

E. Mirror Glass: Float glass, Type I, Class 1, Quality q2 (ASTM C1036), with silvering, copper coating, and suitable protective organic coating to copper backing in accordance with FS A-A-3002.

F. Adhesive: Epoxy 2-component epoxy type, waterproof.

G. Fasteners, Screws, and Bolts: Hot dip galvanized, tamper-proof.

H. Expansion Shields: Fiber, lead, or rubber as recommended by accessory manufacturer for component and substrate.

2.2 SHOP FABRICATION

A. Shop or factory fabricate and finish components, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters and anchor components for installation.

1. Do not modify at the Jobsite.

2. Grind welded joints smooth.

3. Fabricate units made of metal sheet of seamless sheets, with flat surfaces.

2.3 FINISHES

A. Stainless Steel: No. 4 satin brushed finish.

B. Chrome/Nickel Plating: ASTM B456, Type SC 2, Satin finish.

C. Galvanizing for Ferrous Metal Items and Fastening Devices, Other Than Sheet: ASTM A123 to 1.25 ounces per square yard, hot-dip galvanized after fabrication.

D. Shop Primed Ferrous Metals: Pretreat and clean, spray apply one coat primer and bake.

E. Back paint components where contact is made with building finishes to prevent electrolysis.

2.4 TOILET ROOM ACCESSORIES

A. Provide the following products as manufactured by Bobrick Washroom Equipment Company, or equal. Provide solid backing/blocking as required for each accessory.

1. Grab Bar with Concealed Mount Flanges:

   a. Number: Bobrick, B-6806 series.

   b. Size: 1-1/2" diameter.

   c. Mount: 33" with 1-1/2" wall clearance (handicap accessible).

   d. Finish: Satin stainless steel with peened grip.

2. Surface-Mounted Robe Hook:

   a. Number: Bobrick, B-211.

   b. Size: Flange 2-3/4"; hook 3".

   c. Mount: 38” - 40” height off floor (handicap accessible).

   d. Finish: Satin nickel-plated brass casting.

3. Towel Bar:

   a. Number: Bobrick, B-6747.

   b. Size: 24" long x 3 1/4 " deep.

   c. Mount: Surface mounted.

   d. Finish: Satin finish stainless steel.

4. Mirror with Stainless Steel Angle Welded Frame:

   a. Number: Bobrick, B-290 series.

   b. Size: As shown on the Drawings.

   c. Mount: Concealed wall mount.

   d. Finish: Satin finish stainless steel.

5. Soap Dispenser:

   a. Number: Bobrick, B-2112.

   b. Size: 8-1/8" W x 4-3/4" H x 3-1/2" D.

   c. Mount: Surface wall mount at 41-1/2” to top of unit (handicap accessible).

   d. Finish: Satin stainless steel.

6. Combination Toilet Tissue, Seat Cover and Napkin Disposal Unit:

   a. Number: Bobrick, B-3574 Series (verify right or left hand unit).

   b. Size: 17-3/16” W X 30-5/8” H X 4-1/8” D.

   c. Mount: Recessed at 41-7/8” to top of unit (handicap accessible).

   d. Finish: Satin stainless steel.

2.3 OTHER MATERIALS

A. Provide other materials, not specifically described but required for a complete and proper installation, subject to the approval of the Architect.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 INSTALLATION

A. Coordinate as required with other trades to assure proper and adequate provision in the work of those trades for interface with the work of this Section.

B. Install accessories in accordance with manufacturers' instructions and ADAAG.

C. Install each item in its proper location, firmly anchored into position, level and plumb, and in accordance with the manufacturer's recommendations.

3.3 CLEANING

A. Clean and polish all exposed surfaces after removing protective coatings. Clean exposed surfaces of mirror units per manufacturer's recommendations.

B. Broom clean and remove from the Site all scraps and other debris from this work.

END OF SECTION

SECTION 10 44 00

FIRE PROTECTION SPECIALTIES

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide portable fire extinguishers, cabinets and brackets where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Section 06 10 00: Rough Carpentry - Backing provisions.

2. Section 09 21 16: Gypsum Board Assemblies.

1.2 REFERENCES

A. NFPA 10 - Standard for Portable Fire Extinguishers.

B. UL - Fire Protection Equipment Directory.

1.3 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1.4 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

B. Product Data: Include rough-in dimensions, relationships of box to surrounding construction, door hardware, cabinet type and materials, trim style, door construction, panel style, and materials.

C. Provide manufacturer's Installation Instructions.

D. Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.

1.5 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

PART 2 - PRODUCTS

2.1 FIRE EXTINGUISHER CABINETS

A. Semi-Recessed Mounted Cabinets: J.L. Industries Cosmopolitan Model No. 1035F10, equal products by Larsen's Manufacturing Company, or equal.

1. Door and Trim Construction: No. 4 stainless steel. Flush cabinet doors with a 5/8" door stop, attached by a continuous hinge and equipped with zinc-plated handle and roller catch.

2. Finish: Satin stainless steel.

3. Glazing Material: 1/8" clear acrylic.

4. Wall Opening: 11-1/2" x 25" x 6".

5. Trim: Flat trim.

6. Box: Manufacturer's standard box, cold-rolled steel with electrostatically applied white polyester powder coating, thermally fused.

B. Door Hardware: Provide manufacturer's standard door-operating hardware of proper type for cabinet type, trim style, and door material and style indicated.

2.2 FIRE EXTINGUISHERS

A. General: Provide fire extinguisher for each cabinet. Conform to NFPA 10.

B. Dry Chemical Type: J.L. Industries Model No. Cosmic 5E, equal products by Potter Roemer or Larsen's Manufacturing Co., or equal, 5 lbs., 14-5/8" height x 4-1/4" diameter.

C. UL Rating: 2A:10:B:C.

2.3 MOUNTING BRACKETS

A. Brackets: Designed to prevent accidentally dislodging extinguisher, J.L. Industries Model No. MB818, equal products by Potter-Roemer or Larsen's Manufacturing Co., or equal, 16-gauge glossy polyester coated steel. Provide brackets for extinguishers not located in cabinets.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

B. Examine walls and partitions for thickness and framing for cabinets to verify cabinet depth and mounting prior to cabinet installation.

C. Verify all fire extinguisher locations with Fire Department and Architect before installing.

3.2 INSTALLATION

A. Coordinate as required with other trades to assure proper and adequate provision in the work of those trades for interface with the work of this Section.

B. Install in accordance with manufacturer's directions for type of mounting required at height and locations indicated and in compliance with applicable regulations of governing authorities.

C. Fasten mounting brackets and cabinets to structure, square and plumb.

D. Identify bracket-mounted extinguishers with red letter decals spelling “FIRE EXTINGUISHER” applied to wall surface. Letter size, style and location selected by Architect.

END OF SECTION

SECTION 10 75 16

GROUND-SET FLAGPOLES

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide ground-set aluminum flagpoles where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Structural Drawings: Cast-In-Place Concrete.

1.2 REFERENCES

A. AA - Aluminum Association: Designation System for Aluminum Finishes.

B. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum.

C. NAAMM AMP 500 - (National Association of Architectural Metal Manufacturers) Metal Finishes Manual.

D. NAAMM FP 1001 - Guide Specifications for Design of Metal Flagpoles.

1.3 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Source Limitations:

1. Obtain flagpole as a complete unit, including fittings, accessories, bases, and anchorage devices, from a single manufacturer.

2. Obtain flagpoles through one source from a single manufacturer.

C. Structural Performance: Provide flagpole assemblies, including anchorages and supports, capable of withstanding the effects of wind loads determined according to NAAMM FP 1001.

1. Base flagpole design on polyester flags of maximum standard size suitable for use with flagpole or flag size indicated, whichever is more stringent.

2. Basic Wind Speed: 100 mph; 3-second gust speed at 33 feet aboveground.

1.4 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

B. Product Data: Submit materials list, manufacturer's specifications and other data, and Shop Drawings showing general layout, dimensions, base design and its connection to foundation, anchoring and support system, and grounding system.

C. Shop Drawings: Include elevations and details showing general arrangement, jointing, fittings and accessories, grounding, and anchoring and supporting systems. Include details of foundation system for ground-set flagpoles. Provide a structurally designed concrete footing detail.

D. Finish Samples for Verification: For each finished material used for flagpoles and accessories.

1.5 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

B. Spiral wrap flagpoles with heavy paper and enclose in a hard fiber tube or other protective container.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. American Flagpole & Flag Company.

B. Eder Flag Manufacturing Company, Inc.

C. Or equal.

2.2 FLAGPOLES

A. Provide ground set foundation assembly as standard with the approved manufacturer and as approved by governmental agencies having jurisdiction.

B. Overall Dimensions:

1. 30'-0" total exposed height.

2. 6" butt diameter, 3" top diameter.

3. 0.188" wall thickness minimum.

C. Design:

1. Uniform, straight line, cone tapered sections above cylindrical butt sections, manufactured from seamless aluminum tube of 6063-T6 alloy, heat-treated and age hardened.

2. Taper 1" in 5' - 6".

3. Provide internal splicing, self-aligning sleeve of same material as flagpole for snug fitting, precision field joints.

2.3 FITTINGS AND ACCESSORIES

A. Provide aluminum flash collar with satin anodized finish.

B. Finial Ball: Aluminum 356 alloy die cast, 8 inches in diameter with flush seam. Stem to be aluminum alloy 6061 T 6 with 5/8" NC thread, gold anodized finish.

C. Provide truck assembly on each flagpole consisting of cast aluminum assembly with ball bearing non-fouling, revolving double truck.

D. Cast Aluminum Cleats: 9" long, two per flagpole, with aluminum fastenings.

E. Halyards: Cotton braided #10 5/16" diameter government specification rope, bronze or bronze chrome plated snap hooks for two flags.

F. Finish exposed surfaces to match the flagpole.

2.4 FINISHES

A. Metal Finishes, General: Comply with NAAMM's Metal Finishes Manual for recommendations for applying and designating finishes.

B. Aluminum: Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.

1. Class I, Color Anodic Finish: AA-M12C22A42/A44 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, integrally colored or electrolytically deposited color coating 0.018 mm or thicker) complying with AAMA 611.

2. Finish for Exposed Aluminum Surfaces: Dark bronze.

2.5 FOUNDATIONS

A. Provide engineered foundation to comply with pertinent requirements of governmental agencies having jurisdiction and in accordance with flagpole manufacturer's recommendations.

B. Apply for, pay for and obtain deferred approval permit.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 INSTALLATION

A. Install the flagpoles and accessories in strict accordance with the manufacturer's recommendations as approved by the Architect, aligning plumb to a vertical tolerance of one in 1000, and adjusting operating components for optimum smoothness of operation.

END OF SECTION

SECTION 12 24 13

ROLLER WINDOW SHADES

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide manually operated sunscreen and blackout roller shade systems for all new windows, as specified herein, and as needed for a complete and proper installation.

B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Section 06 10 00: Rough Carpentry.

2. Section 09 21 16: Gypsum Board Assemblies.

3. Section 09 51 13: Acoustical Panel Ceilings.

1.2 REFERENCES

A. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.

B. NFPA 701 - Standard Methods of Fire Tests for Flame Propagation of Textiles and Films.

1.3 QUALITY ASSURANCE

A. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

B. Manufacturer Qualifications: Obtain roller shades system through one source from a single manufacturer with a minimum of ten (10) years experience and minimum of five (5) projects of similar scope and size in manufacturing products comparable to those specified in this Section.

C. Installer Qualifications: Installer trained and certified by the manufacturer with a minimum of ten (10) years experience in installing products comparable to those specified in this Section.

D. Fire-Test-Response Characteristics: Passes NFPA 701 small and large-scale vertical burn. Materials tested shall be identical to products proposed for use.

E. ShadeCloth Anti-Microbial Characteristics: 'No Growth' per ASTM G21 results for fungi ATCC 9642, ATCC 9644, and ATCC 9645.

F. Environmental Certification for PVC-Free Shadecloth: Submit written certification from the manufacturer, including third party evaluation, recycling characteristics, and perpetual use certification as specified below. Initial submittals which do not include the Environmental Certification will be rejected. Materials that are simply 'PVC free' without identifying their inputs shall not qualify as meeting the intent of this specification and shall be rejected.

1. Third Party Evaluation: Provide documentation stating the shade cloth has undergone third party evaluation for all chemical inputs, down to a scale of 100 parts per million, that have been evaluated for human and environmental safety. Identify any and all inputs, which are known to be carcinogenic, mutagenic, teratogenic, reproductively toxic, or endocrine disrupting. Also identify items that are toxic to aquatic systems, contain heavy metals, or organohalogens. The material shall contain no inputs that are known problems to human or environmental health per the above major criteria, except for an input that is required to meet local fire codes.

2. Recycling Characteristics: Provide documentation that the shade cloth can, and is part of a closed loop of perpetual use and not be required to be down cycled, incinerated or otherwise thrown away. Scrap material can be sent back to the mill for reprocessing and recycling into the same quality yarn and woven into new material, without down cycling. Certify that this process is currently underway and will be utilized for this project.

3. Perpetual Use Certification: Certify that at the end of the useful life of the shade cloth, that the material can be sent back to the manufacturer for recapture as part of a closed loop of perpetual use and that the material can and will be reconstituted into new yarn, for weaving into new shade cloth. Provide information on each shade band indicating that the shade band can be sent back to the manufacturer for this purpose.

1.4 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

B. Product Data: Submit materials list, manufacturer's specifications, installation instructions, and other data.

C. Shop Drawings: Include shade schedule indicating size, location and keys to details; head, jamb and sill details; mounting dimension requirements for each product and condition; operation direction.

D. Selection Samples: For each finish product specified, one set of shade cloth options and aluminum finish color samples representing manufacturer's full range of available colors and patterns, for Architect's selection.

E. Verification Samples: For each finish product specified, one complete set of shade components, unassembled, demonstrating compliance with specified requirements. Shadecloth sample and aluminum finish sample as selected. Mark face of material to indicate interior faces.

F. Maintenance Data: Methods for maintaining roller shades, precautions regarding cleaning materials and methods, instructions for operating hardware and controls.

1.5 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

B. Deliver shades in factory-labeled packages, marked with manufacturer and product name, fire-test-response characteristics, and location of installation using same room designations indicated on Drawings.

C. Handle and store shades in accordance with manufacturer's recommendations.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Install roller shades after finish work including painting is complete and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

B. Coordinate with window installation and placement of concealed blocking to support shades.

1.7 WARRANTY

A. Hardware, Accessories, and Shadecloth Warranty: Manufacturer's standard non-depreciating twenty-five year limited warranty.

B. Roller Shade Installation: One (1) year from date of Substantial Completion, not including scaffolding, lifts or other means to reach inaccessible areas, which are deemed City’s responsibility.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: MechoShade Systems LLC, Long Island City, NY. Telephone: (718) 729-2020, or equal.

2.2 SYSTEM DESCRIPTION

A. Mecho/5 manually operated fabric window shade system, or equal.

1. Shade Type: Double roller.

2. Universal drive capability to offset drive chain for reverse or regular roll shades.

3. Drop Position: As selected by Architect.

4. Mounting: As selected by Architect.

5. Size (WxH): Size to fit window.

6. Fabric: As indicated in Article 2.4.

2.3 COMPONENTS

A. Manual Operated Chain Drive Hardware and Brackets:

1. Provide for universal, regular and offset drive capacity, allowing drive chain to fall at front, rear or non-offset for all shade drive end brackets. Universal offset shall be adjustable for future change.

2. Provide shade hardware system that allows for removable regular and/or reverse roll fascias to be mounted continuously across two or more shade bands without requiring exposed fasteners of any kind.

3. Provide shade hardware system that allows multi-banded manually operated shades to be capable of smooth operation when the axis is offset a maximum of 6 degrees on each side of the plane perpendicular to the radial line of the curve, for a 12 degrees total offset.

4. Provide positive mechanical engagement of drive mechanism to shade roller tube. Friction fit connectors for drive mechanism connection to shade roller tube are not acceptable.

5. Provide shade hardware constructed of minimum 1/8-inch thick plated steel or heavier as required to support 150 percent of the full weight of each shade.

6. Drive Bracket / Brake Assembly:

a. Drive Bracket shall be fully integrated with all accessories, including, but not limited to fascia, room darkening side / sill channels, center supports and connectors for multi-banded shades.

b. Drive sprocket and brake assembly shall rotate and be supported on a welded 3/8-inch steel pin.

c. The brake shall be an overrunning clutch design which disengages to 90 percent during the raising and lowering of a shade. The brake shall withstand a pull force of 50 lbs. in the stopped position.

d. The braking mechanism shall be applied to an oil-impregnated hub on to which the brake system is mounted. The oil impregnated hub design includes an articulated brake assembly, which assures a smooth, non-jerky operation in raising and lowering the shades. The assembly shall be permanently lubricated. Products that require externally applied lubrication and or not permanently lubricated are not acceptable.

e. The entire assembly shall be fully mounted on the steel support bracket, and fully independent of the shade tube assembly, which may be removed and reinstalled without effecting the roller shade

7. Double Roller Brackets: Configured for light-filtering and room-darkening shades in one opening.

a. Light-Filtering Fabric: Room-side of opening.

b. Room-Darkening Fabric: Glass-side of opening.

c. Operating chain pulls for both fabrics configured for the same side of the window.

8. Drive Chain: Continuous loop #10 qualified stainless steel chain rated to 100 lb. minimum breaking strength. Nickel plate chain shall not be accepted. Provide upper and lower limit stops.

B. Shade Bands: Construction of shade band includes the fabric, the hem weight, hem-pocket, shade roller tube, and the attachment of the shade band to the roller tube. Sewn hems and open hem pockets are not acceptable.

1. Hem Pockets and Hem Weights: Fabric hem pocket with RF-welded seams (including welded ends) and concealed hem weights. Hem weights shall be of appropriate size and weight for shade band. Hem weight shall be continuous inside a sealed hem pocket. Hem pocket construction and hem weights shall be similar, for all shades within one room.

a. Room-Darkening Shades: Slotted bottom bar with wool-pile light seal.

2. Shade Band and Shade Roller Attachment:

a. Use extruded aluminum shade roller tube of a diameter and wall thickness required to support shade fabric without excessive deflection. Roller tubes less than 1.55 inch in diameter for manual shades are not acceptable.

b. Provide for positive mechanical engagement with drive / brake mechanism.

c. Provide for positive mechanical attachment of shade band to roller tube; shade band shall be made removable / replaceable with a "snap-on" snap-off" spline mounting, without having to remove shade roller from shade brackets.

d. Mounting spline shall not require use of adhesives, adhesive tapes, staples, and/or rivets.

e. Any method of attaching shade band to roller tube that requires the use of: adhesive, adhesive tapes, staples, and/or rivets are not acceptable.

2.4 SHADE FABRIC

A. Solar Shadecloth: Sunscreen roller shades in all exterior windows of rooms and spaces shown on the Drawings, and related mounting systems and accessories.

a. Environmentally Certified PVC-Free Shadecloth: EcoVeil group, 1350 Series, fabricated from TPO for both core yarn and jacket, single thickness, opaque coated reinforced non-raveling yarn.

b. Fabric Thickness: 0.034 inch.

c. Mesh Weight: 12.68 oz./yd^2.

d. Weave: 5 percent open, 2x2 basket weave.

B. Blackout Shadecloth: Room darkening blackout fabric in all exterior windows of rooms and spaces shown on Drawings, and related mounting systems and accessories.

a. Vinyl Room Darkening Shadecloth (Single-Fabric): 0700 Series blackout material, washable laminated and embossed vinyl coated fabric, with a minimum of 62 threads per square inch.

b. Fabric Thickness: 0.013 inch.

c. Mesh Weight: 12.68 oz./yd^2.

C. Colors: Selected by Architect from manufacturer's standard colors.

D. Fabric Properties: Non-flammable, color-fast, impervious to heat and moisture, and able to retain its shape under normal operation.

2.5 ACCESSORIES

A. Fascia: Removable extruded aluminum. Size as required to conceal shade mounting. Attachable to brackets without exposed fasteners.

1. Finish and color: as selected by Architect.

2. Can be installed across two or more shade bands in one piece.

3. Single Fascia: Accommodate regular roll shades or reverse roll shades. Verify with Architect.

4. Profile: Square.

B. Room-Darkening Channels: Extruded aluminum side and center channels with brush pile edge seals, mounting base, and concealed fasteners. Channels to accept one-piece exposed blackout hembar to assure side light control and sill light control.

C. Other Materials: Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Architect subject to the approval of the City.

2.6 SHADE FABRICATION

A. Field measure finished openings prior to ordering or fabrication.

1. Do not fabricate shades until field dimensions for each opening have been taken with finished conditions in place. "Hold to" dimensions are not acceptable.

B. Fabricate units to completely fill existing openings from head to sill and jamb-to-jamb, unless specifically indicated otherwise.

C. Fabricate shadecloth to hang flat without buckling or distortion. Fabricate with heat-sealed trimmed edges to hang straight without curling or raveling. Fabricate unguided shadecloth to roll true and straight without shifting sideways more than 1/8 inch in either direction per 8 feet of shade height due to warp distortion or weave design. Fabricate hem into hem type selected by Architect.

D. Provide battens in standard shades as required to assure proper tracking and uniform rolling of the shadebands. Contractor shall be responsible for ensuring the width-to-height (W:H) ratios will not exceed manufacturer's standards or, in absence of such standards, shall be responsible for establishing appropriate standards to assure proper tracking and rolling of the shadecloth within specified standards. Battens shall be roll-formed stainless steel or tempered steel, as required.

E. For railroaded shadebands, provide seams in railroaded multi-width shadebands as required to meet size requirements and in accordance with seam alignment as acceptable to Architect. Seams shall be properly located. Furnish battens in place of plain seams when the width, height, or weight of the shade exceeds manufacturer's standards. In absence of such standards, assure proper use of seams or battens as required, and assure the proper tracking of the railroaded multi-width shadebands.

F. Openings Requiring Continuous Multiple Shade Units with Separate Rollers: Locate roller joints at window mullion centers; butt rollers end-to-end.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the work.

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

C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the Project conditions.

3.3 INSTALLATION

A. Install roller shades level, plumb, square, and true according to manufacturer's written instructions, and located so shade band is not closer than 2 inches to interior face of glass. Allow proper clearances for window operation hardware.

B. Adjust and balance roller shades to operate smoothly, easily, safely, and free from binding or malfunction throughout entire operational range.

C. Clean roller shade surfaces after installation, according to manufacturer's written instructions.

D. Engage Installer to train City's maintenance personnel to adjust, operate and maintain roller shade systems.

3.4 PROTECTION

A. Protect installed products until completion of Project.

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

1. Clean soiled shades and exposed components as recommended by manufacturer.

2. Replace shades that cannot be cleaned to "like new" condition.

END OF SECTION

SECTION 31 10 00

SITE CLEARING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Remove from the entire Site all existing plants unless noted on the Drawings to remain, grass, grass roots, shrubs, weed growth, tree roots, brush, masonry, asphalt paving, rubbish, debris, organic material, large rocks and other objectionable materials, within limits of construction site as specified herein, and as needed to meet the requirements of the construction shown in the Contract Documents.

1. Grub and scrape clean.

2. All material removed from the surface shall be removed from the Site.

B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Civil Drawings: Grading, Excavation and Fill.

1.2 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. Use equipment adequate in size, capacity, and numbers to accomplish the work of this Section in a timely manner.

C. Comply with requirements of governmental agencies having jurisdiction.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 PROTECTION

A. Provide temporary fences, barricades, coverings, or other protections to preserve existing items indicated to remain and to prevent injury or damage to person or property. Apply protections to adjacent properties as required.

B. Control air pollution caused by dust and dirt; comply with governing regulations.

3.2 SITE CLEARING AND PREPARATION

A. Remove existing improvements, both above-grade and below-grade to the extent indicated or as otherwise required to permit new construction.

B. Disconnect existing utilities, seal or cap at connection to service lines in accordance with utility requirements before starting demolition operations.

C. Remove brush, weeds, rocks, and other organic matter not scheduled for retention.

D. Retain trees and landscape materials indicated.

E. Restore damaged work to the condition existing prior to the start of work, unless otherwise directed.

3.3 EXCESS MATERIALS DISPOSAL

A. Dispose of removed and demolished items, including trash and debris, off the City's property, unless otherwise indicated. Burning of waste materials on the site is not permitted.

B. Recycle any materials possible.

END OF SECTION

SECTION 31 31 16.13

CHEMICAL TERMITE CONTROL

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide soil treatment for control of subterranean termites.

B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Structural Drawings: Cast-In-Place Concrete.

2. Section 31 10 00: Site Clearing.

3. Civil Drawings: Grading, Excavation and Fill.

1.2 QUALITY ASSURANCE

A. Applicator Qualifications: A pest control operator registered and licensed in the State of California and who is experienced and has completed termite control treatment similar to that indicated for this Project and whose work has a record of minimum ten year’s successful in-service performance.

B. Regulatory Requirements: Provide materials in compliance with all current regulations of the State of California and which bear a Federal registration number of the EPA. Materials shall conform to State and Local regulations to meet minimum treatment standards for preventive preconstruction treatments.

C. Verify chemicals are approved for use by applicable authorities in termite control at Project location and under specific Project conditions including proximity to water sources.

1.3 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

B. Product Data: Provide manufacturer's literature on chemicals to be used for Project, including EPA Registration number and percentages of each type of chemical in water emulsion and manufacturer's recommended application rates.

C. Submit manufacturer's recommendations which, when approved by the Architect, will become the basis for accepting or rejecting actual installation procedures used on the Work.

D. Certification: Provide certification that chemicals comply with Federal Insecticide, Fungicide and Rodenticide Act, and applicable State and local requirements.

E. Qualification Data: For firms and persons specified in Article 1.2 to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

F. Soil Treatment Application Report: After application of termiticide is completed, submit report for City's record information, including the following as applicable.

1. Date and time of application.

2. Moisture content of soil before application.

3. Brand name and manufacturer of termiticide.

4. Quantity of undiluted termiticide used.

5. Dilutions, methods, volumes, and rates of application used.

6. Areas of application.

7. Water source for application.

G. Warranties: Special warranties specified in this Section.

1.4 PROJECT CONDITIONS

A. Environmental Limitations: To ensure penetration, do not treat soil that is water saturated or frozen. Do not treat soil while precipitation is occurring. Comply with EPA-Registered Label requirements and requirements of authorities having jurisdiction.

1.5 COORDINATION

A. Coordinate soil treatment application with excavating, filling, and grading and concreting operations. Treat soil under footings, grade beams, and ground-supported slabs, before construction.

1.6 WARRANTY

A. Warranty: Furnish written warranty, executed by applicator and Contractor, certifying that applied soil termiticide treatment will prevent infestation of subterranean termites. If subterranean termite activity is discovered during warranty period, applicator will re-treat soil and repair or replace damage caused by termite infestation.

B. Warranty Period: Five (5) years from date of Substantial Completion.

C. Provide performance bond for soil treatment, termite/pest control.

PART 2 - PRODUCTS

2.1 SOIL TREATMENT SOLUTION

A. General: Use an emulsible, concentrated termiticide that dilutes with water, specially formulated to prevent termite infestation. Fuel oil will not be permitted as a diluent. Provide a solution consisting of one of following chemical elements.

B. Products: Subject to compliance with requirements, products that may be incorporated in the work include Dragnet FT (Permethrin) by FMC Corp., or equal solutions as recommended by applicator if approved for intended application by the City. Use only soil treatment solutions that are not harmful to plants.

PART 3 - EXECUTION

3.1 INSPECTION

A. Examine substrates, areas, and conditions, with applicator present, for compliance with requirements for moisture content of the soil, interfaces with earthwork, slab and foundation work, landscaping, and other conditions affecting performance of termite control.

B. During initial stages of construction, determine fill material to be used and set tentative date for initial service and schedule subsequent service as deemed necessary for completion of soil treatment.

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

3.2 PREPARATION

A. General: Comply with the most stringent requirements of authorities having jurisdiction and with manufacturer's written instructions for preparing substrate. Remove all extraneous sources of wood cellulose and other edible materials such as wood debris, tree stumps and roots, stakes, formwork, and construction waste wood from soil and around foundations.

B. Soil Treatment Preparation: Remove foreign matter and impermeable soil materials that could decrease treatment effectiveness on areas to be treated. Loosen, rake, and level soil to be treated, except previously compacted areas under slabs and footings. Termiticides may be applied before placing compacted fill under slabs if recommended by termiticide manufacturer.

C. Fit filling hose connected to water source at the Site with a backflow preventer, complying with requirements of authorities having jurisdiction.

3.3 APPLICATION, GENERAL

A. Comply with the most stringent requirements of authorities having jurisdiction and with manufacturer's EPA-Registered Label for products.

B. Dilute product with water to concentration level recommended by manufacturer.

C. Do not apply soil poison when surface water is present.

3.4 APPLYING SOIL TREATMENT

A. Post warning signs in areas of application.

B. Application: Mix soil treatment termiticide solution to a uniform consistency. Provide quantity required for application at the label volume and rate for the maximum specified concentration of termiticide, according to manufacturer's EPA-Registered Label, to the following so that a continuous horizontal and vertical termiticidal barrier or treated zone is established around and under building construction. Distribute the treatment evenly.

1. Slabs-on-Grade: Under ground-supported slab construction, including footings, building slabs, and attached slabs as an overall treatment. Treat soil materials before concrete footings and slabs are placed.

2. Foundations: Adjacent soil including soil along entire inside perimeter of foundation walls, along both sides of interior partition walls, around plumbing pipes and electric conduit penetrating slab, and around interior column footers, piers, and chimney bases; and along entire outside perimeter, from grade to bottom of footing. Avoid soil washout around footings.

3. Penetrations: At expansion joints, control joints, and areas where slabs will be penetrated.

C. Treat minimum 18" wide strip around perimeter of building, including where building is abutted by concrete slabs, paving, and other permanent surfacing.

D. Avoid disturbance of treated soil after application.

E. Reapply soil treatment solution to areas disturbed by subsequent excavation, grading, landscaping, or other construction activities following application.

3.5 CLEANING AND PROTECTION

A. Remove and handle all termiticide containers in accordance with label instructions after application.

B. Protect termiticide solution, dispersed in treated soils and fills, from being diluted until ground-supported slabs are installed. Cover treated soil with waterproof barrier if slab will not be poured the same day as treatment, in accordance with EPA-Registered Label instructions.

C. Keep all personnel away from the treated area until completely dry.

END OF SECTION

SECTION 32 17 23.13

PAINTED PAVEMENT MARKINGS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide pavement marking in the types and arrangements shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Section 10 14 00: Signage.

1.2 REFERENCES

A. SCAQMD (South Coast Air Quality Management District) Rule 1113 - Architectural Coatings.

1.3 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1.4 SUBMITTALS

A. Comply with pertinent provisions of City of Torrance documents.

B. Product Data:

1. Materials list of items proposed to be provided under this Section.

2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.

3. Photographs, scale drawings, or other data acceptable to the Architect, showing types of graphics proposed to be used.

1.5 PRODUCT HANDLING

A. Comply with pertinent provisions of City of Torrance documents.

1.6 WARRANTY

A. Upon completion of this portion of the Work, submit 2 executed copies of the installer's warranty in a form acceptable to the City, agreeing to replace or repair work of this Section which fails due to defective materials or workmanship within five years per City's standards.

PART 2 - PRODUCTS

2.1 PAVEMENT MARKING PAINT

A. Provide paint specifically formulated for use as pavement marking in automobile traffic areas, and in the colors selected by the Architect from standard colors of the approved manufacturer.

B. Pavement Paint: Alkyd traffic paint modified with chlorinated rubber, bearing approval of SCAQMD.

1. Line Marking and Arrow Paint: Black traffic paint, Velve Top Chlorinated Low VOC Traffic Paint, or equal.

2. Handicap Signs and Lettering: White and blue paint conforming to above specification.

3. Yellow color to conform to above specification.

2.2 OTHER MATERIALS

A. Provide other materials, not specifically described but required for a complete and proper installation, subject to the approval of the Architect.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.2 APPLICATION

A. Secure the Architect's approval of graphics design and layout prior to start of application.

B. Prior to application of paint, allow the pavement to properly cure. Cover and protect surfaces not to be painted. Clean and prepare in accordance with paint manufacturer's printed instructions.

C. Using mechanical equipment, apply the paint evenly, straight or curved as indicated, without holidays and other defects.

D. Marking Width and Color: Unless indicated otherwise, marking width and color are as follows.

		Width	Color
1.	Parking Stall Lines	4"	White
2.	Traffic Markings	4"	Yellow
3.	Striping: General	4"	Yellow
4.	Striped: Handicapped	4"	Blue
5.	Handicapped Emblem	2"	White on Blue Background

E. Provide directional arrows, numbering and lettering in similar manner and with same paint.

3.3 PROTECTION AND CLEANUP

A. Provide traffic cones, barricades, and other devices needed to protect the paint until it is sufficiently dry to withstand traffic.

B. When paint is thoroughly dry, visually inspect the entire application, and touch up as required to provide clean, straight lines and surfaces throughout.

C. Using a permanently opaque paint identical in color to the surface on which the paint was applied, block out and eliminate all traces of splashed, tracked, and/or spilled pavement marking paint from the background surfaces.

END OF SECTION