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# **Specifications**

**For the Construction of:**

**SOBOBA HORSESHOE VILLAGE – PHASE 2**

**San Jacinto, California**

**DRAFT SET**

Project No. 2025-0428  
June - 2026

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## **PROJECT REQUIREMENTS**

### **1. GENERAL:**

A. Project Requirements, described herein are in addition to the General Conditions and Agreement between Owner and Contractor.

**2. BRIEF FORM OF SPECIFICATIONS:** These Project Requirements, specifications and other documents are of abbreviated or "streamlined" type. Omissions of words or phrases such as "the Contractor shall", "shall be", "as noted on the drawings", "according to the drawings", in accordance with the specifications", "a", "an", "the", and "all" are intentional. Omitted words and phrases shall be supplied by inference in same manner as they are when a "note" occurs on drawings. This is for purposes of brevity, and is not intended, nor shall it be construed, as license to modify requirements. Therefore, all parties shall interpret provisions and requirements of specifications as mandatory, unless otherwise stipulated. (NOTE: Unless specifically noted to the contrary, all directions and instructions contained in Contract Documents are addressed to Contractor who signs agreement with Owner.)

### **3. CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS:**

A. Execute work per Contract Documents. Make no changes without first receiving written permission from Owner. Where detailed information is lacking, before proceeding with work, refer matter to Owner and/or Architect for information.

B. When dimensions are not written on drawings, submit RFI, Architect will furnish interpretation. Dimensions shall not be obtained by scaling drawings. Large-scale drawings take precedence over small-scale drawings and full size drawings shall be followed in preference to both small and large scale drawings. Do not assume dimensions.

C. In general, drawings indicate dimensions, positions and details of construction; specifications describe qualities of materials, performance, installation and erection procedures, and workmanship.

D. In case of difference between specifications and drawings with reference to size, shape or dimension, and where there are typographical errors in specifications or notational errors on drawings, Owner and/or Architect will decide upon correct intent. Should an error appear in specifications or drawings or in work done by others, affecting this work, notify Owner and/or Architect with written RFI at once for instructions as to procedure. If Contractor proceeds with work without said instructions from Owner and/or Architect, Contractor shall make good any resulting damage or defects.

E. Should conflict occur in or between Drawings and Specifications or where detail reference on Contract Drawings have been omitted, Contractor is deemed to

have estimated the most expensive materials and construction involved.

- F. Drawings and diagrams for mechanical and electrical work shall be followed only for work for which they were especially prepared and shall be considered as diagrammatic only; they shall not be used for any structural guidance nor for architectural layout.
- G. Where information is shown, specified or otherwise included in one place in the Construction Documents, it is to be taken as shown in all Documents, in the same location and quantities within the work, whether specification shown or not.

**4. REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR:**

- A. The Contractor shall perform no portion of the Work at any time without Contract Documents.
- B. Contractor and his Subcontractors by their act of submitting a bid acknowledge that they have informed themselves fully regarding requirements of drawings and specifications, "General Conditions" and " Architectural Project Requirements", and of all applicable laws, ordinances and regulations."

**5. SUPERVISION AND CONSTRUCTION PROCEDURES:**

- A. Contractor shall maintain an adequate inspection system and perform such inspections as will assure that work performed under this Contract conforms to contract requirements and shall maintain and make available to Owner and/or Architect adequate records of such inspections."
- B. Field Checking: Prior to submission to Owner and/or Architect, all shop drawings, brochures, and other construction data shall be checked for quantity, size and dimensions by Contractor personnel especially assigned for this purpose. Owner and/or Architect will answer questions raised by the Contractor and will make design determinations regarding materials and equipment, design and arrangement decisions and color selections, but will not be responsible for quantity, size or dimensional errors on shop drawings. In cases of omissions and obvious error and in cases of conflict, either between contract drawings and specifications requirements or between details on contract drawings, such questions shall be called to Owner and/or Architect's attention immediately by written RFI and Owner and/or Architect shall give prompt answers to such questions.
- C. Contractor shall be responsible for coordinating work of his subcontractors and trades so that work as a whole will conform to the approved construction schedule and contract completion date and so that work will be completed efficiently and expeditiously in accordance with Contract Documents. This

coordination shall include, but is not limited to such items as:

1. Contractor and each of his subcontractors shall be responsible for examining all drawings, all sections of specifications and all items of addenda to inform themselves of requirements for their part of the work. In the event there is an omission of an indication of an item or part of work from a location on one drawing in which is indicated in same relative location on another drawing, then Contractor and each subcontractor is responsible for getting written clarification on the issue from the Architect and approval by Owner.
  2. Specifications are divided into sections for convenience of Contractor. Items or parts of work specified shall constitute a responsibility of Contractor regardless of where they are located in specifications. Neither Owner and/or Architect will make decisions on trade jurisdiction nor responsibilities of subcontractors.
  3. Supervise taking of all measurements in field necessary to insure timely fabrication, delivery, and proper fitting together of entire work.
  4. Coordinate work of all trades to eliminate interferences, duplication of work, and unfinished gaps between operations.
  5. Regulate and schedule installation and erection of each trade and craft involved in work so as to eliminate delays due to overlapping in time of starting work of various trades and lack of erection or installation of contiguous or underlying work upon which installation or erection of work or any trade is dependent.
  6. Advise his subcontractors and trades as to features of construction required in their work to receive, engage and support parts of other work and of easements and tolerances required. It is Contractor's responsibility that each of his subcontractors leaves his work in proper condition to receive subsequent application of work of other trades.
  7. See the provision for and placement of all work by applicable trades of his subcontractors are accomplished on schedule.
  8. See that applicable trade and subcontractor furnishes and receives all drawings, templates and other information required for work as a whole.
  9. See that all sleeves, inserts, boxes, piping, conduit, blocking, anchor bolts, and other required items are built into work at proper time in required manner as indicated on drawings and in project documents.
  10. Prepare and protect work as required for introduction into building of materials, fabrication, furniture, and equipment furnished by Owner and not a part of this Contract. Render assistance as required to facilitate installation of items."
- D. Contractor and each of his subcontractors shall be responsible for examining all drawings, all sections of specifications and all items of addenda to inform themselves of requirements for their part of the work. In the event there is an omission of an indication of an item or part of work from a location on one drawings in which is indicated in same relative location on another drawing, then

Contractor and each subcontractor is responsible for getting written clarification on the issue from the Architect and approval by Owner.

- E. Specifications are divided into sections for convenience of Contractor Items or parts of work specified shall constitute a responsibility of Contractor regardless of where they are located in specifications. Neither Owner and/or Architect will make decisions on trade jurisdiction nor responsibilities of subcontractors.
- F. Supervise taking of all measurements in field necessary to insure timely fabrication, delivery and proper fitting together of entire work.
- G. Coordinate work of all crafts to eliminate interferences, duplication of work and unfinished gaps between operations.
- H. Regulate and schedule installation and erection of each trade and craft involved in work so as to eliminate delays due to overlapping in time of starting work of various trades and lack of erection or installation of contiguous or underlying work upon which installation or erection of work or any trade is dependent.
- I. Advise his subcontractors and trades as to features of construction required in their work to receive, engage and support parts of other work, and of easements and tolerances required. It is Contractor's responsibility that each of his subcontractors leaves his work in proper condition to receive subsequent application of work of other trades.
- J. See the provision for and placement of all work by applicable trades of his subcontractors are accomplished on schedule.
- K. See the applicable trade and subcontractor furnishes and receives all drawings, templates and other information required for work as a whole.
- L. See that all sleeves, inserts, boxes, piping, conduit, blocking, anchor bolts and other required items are built into work at proper time in required manner as indicated on drawings and in project documents.
- M. Prepare and protect work as required for introduction into building of materials, fabrication, furniture and equipment furnished by Owner and not a part of this Contract. Render assistance as required to facilitate installation of items.

**6. SUPERINTENDENT:**

- A. The Contractor shall employ for the life of the Contract a Superintendent of Construction who will spend his full time organizing and coordinating the work of all of the various trades for this specific Project. The Superintendent shall be experienced in structural, mechanical, electrical, plumbing, heating and ventilating equipment installation as well as the peculiarities of this type

construction. He shall have no less than 5 years experience in directing construction of projects of this type. The Superintendent shall bring into order and relate the work to avoid interference, establish and preserve clearances

between related parts of the work and maintain the indications on the Drawings and the requirements of the Specifications.

1. The Superintendent shall not be replaced without the Owner's approval or demand, or unless the Superintendent ceases to be employed by the Contractor."

**7. CUTTING AND PATCHING OF WORK:**

- A. Cutting of new work shall be avoided. However, if cutting, patching, repairing, removal and/or replacing is necessary, it shall be performed in accordance with requirements of Contract Documents.
- B. In all cases care shall be exercised in cutting operation. Perform operations under supervision of competent mechanics skilled in applicable trade. Cut openings as small as possible to avoid damage. Careless or avoidable cutting will not be tolerated.
- C. All patching, repairing and replacing of materials and surfaces cut or damaged in execution of work shall be done with applicable materials, so that all surfaces replaced will, upon completion, match surrounding similar surfaces.
- D. All replacing, patching and repairing of materials and surfaces cut or damaged shall be performed by methods and with materials so as not to void, in any way, guarantees or bonds required under this Contract or in force on existing work or work performed under other Contracts."

**8. CLEANING UP:**

- A. During construction period, materials to be used shall be kept in an orderly manner, neatly stacked or piled. Upon completion of work of any trade, remove surplus materials and scrap from jobsite.
- B. Perform "clean-up" work after painting has been completed and just prior to final acceptance of work as a whole by Owner.
- C. With exception specified, use materials and methods for cleaning and polishing as recommended by the applicable manufacturers. Soaps and cleaners shall be of types not injurious to surfaces on which they are used. Use of acids is prohibited except as specified by base material manufacturer.
- D. All work shall be left clean of dirt, splatterings of paint, plaster, concrete, mortar, fingerprints, construction marks and other foreign matter. Contractor shall leave building and premises clean and orderly, ready for occupancy for which it is intended and in accordance with the following "Checklist", in addition to "broom-cleaning":

1. Remove all stains from glass, wash and polish same inside and outside. Do not scratch glass or glazing compound.
2. Clean fixtures and equipment, floors, walls and ceiling surfaces, doors, and other materials exposed to view.
3. Clean and polish metal surfaces, including doors and hardware."

## 9. IDEMNIFICATION

- A. Provisions of the General Conditions and these specifications do no relieve Contractor of his responsibilities for construction procedures nor for safety precautions.

## 10. COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION:

- A. Owner and/or Architect shall decide all questions as to meaning of Drawings and Specifications, including questions as to errors, conflicts, ambiguities, or omissions."
- B. Contractor Information Management Software (CIMS):
  1. RFI's and submittals shall be posted only by GC and never directly by a subcontractor.
  2. Distribution of RFI's and submittals to the design team, by the contractor, may be at the contractor's discretion with copy to Architect. The GC shall assign review of the RFI and Submittal to the design professional(s) most knowledgeable with it plus KTGY. The RFI and Submittal shall be visible only to the design professional(s) responsible review it, KTGY, the Owner and the GC's staff. RFI's and Submittals cannot be visible to any subcontractors. The distribution list shall be limited to the design professional(s) responsible to review it, KTGY, the Owner and the GC's staff.
  3. RFI responses and reviewed submittals will be sent from the design consultant only to KTGY, whether they are under contract with KTGY or not, and not to any other party. RFI responses and reviewed submittals will then be returned to the contractor by KTGY.
  4. At this point the RFI response and reviewing submittals can be made visible to everyone or otherwise distributed to the responsible trades.
  5. The return of reviewed submittals, to the contractor by the Architect, will not require the Architect to indicate the submittal as 'Approved'.
  6. All RFI responses and reviewed submittals will also be sent by KTGY via separate email to the contractor.
  7. RFI and Submittal review in real time can be responded to and reviewed as long as all RFI responses and submittals are processed back through KTGY and are not acted on by the contractor until KTGY has indicated their completion.



**11. MUTUAL RESPONSIBILITY:**

- A. Provide all chases and openings required in the Work and required by other contractors employed by Owner. It shall, however, be duty and responsibility of said other contractors involved to clearly locate, at proper time, all chases and openings required and furnish drawings, templates, and all other information necessary for proper execution of Work and to furnish and install all supporting devices and materials and equipment required by him.
- B. When other sub-contractors are directed to coordinate work with work of this Contractor as far as built-in items, space requirements and time scheduling are concerned, and this Contractor has knowledge of such requirements, he shall be responsible for execution of required coordination.

**12. ELECTRONIC FILES**

- A. Electronic files of selected plan and elevation backgrounds only from the Contract Documents are available from the Architect. Files are sent on an “as is” basis and no warranty is expressed nor implied as to accuracy or conformance or correctness with the Contract Documents. The Architect and its Consultants shall be held harmless for any damages arising from use by others. Architect and its consultants reserve right to update, change and modify files after transmission without notice. Prior to transmission receiver shall sign appropriate waiver form available from Architect.

END OF PROJECT REQUIREMENTS

**SECTION 01 11 00**

**SUMMARY OF WORK**

- 1.01 Drawings and general provisions of the Contract, including other Division 01 Specification Sections and other technical Specification Sections apply to this Section. The Work includes the complete construction of:

SOBOBA HORSESHOE VILLAGE – PHASE 2

San Jacinto, California

in strict conformance with the Drawings and Specifications prepared by:

KTGY  
17911 Von Karman Avenue, Suite 200  
Irvine, California 92614  
Telephone (949) 851-2133  
Fax: (949) 851-5156

AND OTHER CONSULTANTS: As Listed on Drawings

- 1.02 **WORK NOT IN THE CONTRACT:** The term "NIC" means "Not In Contract". Following portions of the Work will be provided by the Owner under separate contract or other arrangement:
1. All other items indicated or specified as NIC.
- 1.03 **UTILITY CHARGES:** The Owner will pay all connection fees and assessments separate from the Contract such as permit fees and all other fees required. Contractor will be reimbursed for fees without mark-up.
- 1.04 Contractor is aware that buildings and pedestrian areas are occupied. Contractor must conduct operations to ensure least inconvenience and maximum safety and protection to public and occupied areas in adjacent buildings.
1. Minimize noise impact.
  2. Minimize dust and debris impact.
  3. Provide and maintain pedestrian barricades and protection.
  4. Maintain and protect exits from occupied areas at all times.
- 1.05 Provide all labor, materials, equipment, freight, taxes, services and administration necessary to complete the work.
- 1.06 Contractor shall be solely responsible for the inclusion of adequate amounts in the bid price to include all work, regardless of whether all required work is indicated, described, implied or necessary in order to produce a complete project.

- 1.07 Abide by Hours of Operation as required by Governing Authority and as requested by Owner. If no other Hours of Operation are defined, contractor shall limit their Hours of Operation for construction as follows:

Weekdays: 5am – 10pm  
Weekends: 7am – 10pm

Hours of Operation apply to activities that create noise levels above 35db.

- 1.08 By signing this Contract, Contractor confirms that they have familiarized himself with the known conditions of the site and that they have made adequate estimates regarding the facilities and the difficulties, which may arise in connection with the execution of the work.
- 1.09 By signing this Contract, Contractor confirms that they have read, reviewed and understands the requirements of all Contract Documents and that all subcontracted trades, under contractor change, have read, reviewed and understand all applicable requirements of the Contract Documents, including requirements of other trades which may impact each subcontracts portion of work.

END OF SECTION

**SECTION 01 11 17**

**OWNER-FURNISHED ITEMS**

**PART 1 - GENERAL**

- 1.01 Drawings and general provisions of the Contract, including other Division 01 Specification Sections and other technical Specification Sections apply to this Section.
- 1.02 **CONDITIONS:** In every case, the Contractor shall be responsible for the correct and properly located installation of the OFCI equipment in accordance with the various manufacturer's specifications and instructions.
- A. Conflicts:** Where a conflict occurs between requirements for OFCI equipment and the actual field conditions, Contractor shall not install the affected equipment until the conflict is resolved. No extra payment will be made to Contractor for correction of improper installation of equipment when reasonably adequate data and instructions for installation were furnished by Owner or various equipment manufacturers.
- B. Owner Furnished Owner Installed (OFOI) Products.** Provide access to project site for Owner's construction team. Coordinate construction and operations of the work with work performed by Owner's construction forces.
1. Inform Owner of Contractor's preferred construction schedule of Owner's portion of the work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
  2. Include Owner's construction forces at pre-installation conferences covering portions of the work that are to receive Owner's work. Attend pre-installation meetings conducted by Owner's construction team if portions of the work depend on or are inter-related with Owner's construction. Include necessary subcontracts affected by Owners Work.
- C. Installation of OFCI Equipment** shall be complete in every detail, with each item accurately and correctly placed, connected, and tested. Installation of OFCI items shall comply with accessible requirements.
- D. Delivery:** OFCI equipment will be delivered to the site of the Work by Owner. Owner shall receive and unload the equipment, place in location directed by Contractor.
- E. Inspection of Delivered Equipment:** Upon delivery of the OFCI equipment, Owner shall open and uncrate the equipment for inspection. The Owner's representative and Contractor together shall inspect each item and maintain a written record of all damage, missing parts, and other defects disclosed, all of

which will be made good by the Owner. Owner shall make necessary repairs or replacements after inspection. After the inspection and any necessary correction and repairs, Contractor shall be solely responsible for the equipment as specified above, until 1 year after substantial completion.

- F. Store and handle OFCI items** in compliance with requirements of this Section. OFCI items damaged during storage, handling or installation shall be repaired or replaced to the satisfaction of the Owner at no additional cost or time to Contract.
- G. Obtain from Owner**, rough-in drawings, diagrams, setting templates and other necessary information pertaining to OFCI items shall be kept at the site for reference and stored readily available to both the Owner and Architect. Contractor shall verify exact sizes and services required for each OFCI item with existing and anticipated field conditions. Deviations from manufacturers' templates will not be approved.
- H. Additional Information:** The Contractor may request and receive from the Owner any necessary additional information, specifications, templates, and the like for any of the OFCI equipment. Contractor may request a manufacturer's representative to supervise the installation of OFCI equipment items, but at no extra cost and/or additional time to Owner.

## **PARTS 2 - PRODUCTS**

### 2.01 OFCI EQUIPMENT:

- A. Equipment List:** The list of OFCI equipment is shown on the Drawings or as provided by the Owner.
- B. Installation Materials:** The Contractor shall provide the attachments, anchors, fittings, supports, fasteners, connectors, and the like that are necessary for proper installations but not regularly furnished by the equipment manufacturers.

## **PART 3 - EXECUTION**

### 3.01 INSTALLATION: In accordance with each equipment manufacturer's specifications, templates, and information, including the necessary assembling of components or sub-assemblies.

- A. Work under the Contract** shall include all provisions necessary to fully incorporate OFCI products into the work, including, as necessary, fasteners, backing, supports, piping, conduit, conductors and other such provisions from point of service to point of connection and field finishing.

**B. Contractor shall be responsible** for final placing, installation, connection, start-up, checking, testing and demonstrated satisfactory operation. Owner will provide names of manufacturer’s representatives, who shall assist the Contractor in checking, testing and demonstrating equipment.

3.02 TESTS: The Contractor shall operate and test each item of OFCI equipment after installation. Should malfunctions occur the Contractor shall effect all the necessary corrections so the equipment operates properly and as intended, at his expense. Provide installation inspections required by jurisdictional authorities for work that included OFCI items.

END OF SECTION

**SECTION 01 11 20**

**DEFINITIONS**

**PART 1 - GENERAL**

- 1.01 Drawings and general provisions of the Contract, including other Division 01 Specification Sections and other technical Specification Sections apply to this Section.
- 1.02 DEFINITIONS:
- A. Drawings:** Words such as "shown", "indicated", "detailed", "noted", "scheduled", or words of similar import shall mean that reference is made to the information on the Drawings unless stated otherwise.
  - B. Actions of Architect:** Such words as "directed", "designated", "selected", and words of similar import shall mean that the direction, designation, selection, or similar action of the Owner and/or Architect is intended unless stated otherwise.
  - C. Required:** The word "required" and words of similar import shall mean "required to complete the Work" and "required by the Owner and/or Architect", as is applicable to the context of the place where used, unless stated otherwise.
  - D. Perform:** The word "perform" shall be understood to mean that the Contractor, at his expense, shall perform all the operations necessary to complete the Work or mentioned portions of the Work, including furnishing and installing materials as are indicated, specified, or required to complete such performance.
  - E. Provide:** The term "provide" shall be understood to mean that the Contractor, at his expense, shall furnish and install the Work and the mentioned portion of the Work, complete and ready for the intended use. These definitions apply the same to future, present, and past tenses except "provided" may mean "contingent upon" where such is the context.
  - F. Equal:** Terms such as "equal", "approved equal", "equivalent", and all terms of similar import shall be understood to be followed by the phrase "in the opinion of the Owner and/or Architect" unless stated otherwise.
  - G. Approval:** Such words as "approved", "approval", "acceptable", "acceptance", or words of similar import shall mean REVIEWED that or similar import of the Owner and/or Architect is intended unless stated otherwise.
  - H. Submit:** Such words as "submit", "submittal", "submission" and terms of similar import shall include the meaning of the phrase "submit to the Owner and/or Architect for his approval" unless otherwise stated.

- I. Language:** Specifications are written in a modified brief style consistent with clarity. Generally, the words “the”, “shall”, “will” and “all” are not stated. Words requiring an action or performance, such as “perform”, “provide”, “erect”, “install”, “furnish”, “connect”, “test”, “coordinate”, and words and phrases of similar import, shall be understood to be preceded by the phrase “The Contractor shall” unless otherwise stated. The requirements indicated and specified apply to all Work of the same kind, class, and type, even though the word “all” is not stated.
- J. Titling and Arrangement:** Article, Paragraph, and Subparagraph titles and other identifications of subject matter in the Specifications are intended as an aid in locating and recognizing various requirements in the Specifications. Except where titling forms a part of the text, such as beginning words of a sentence or where the title establishes the subject, the titles are subordinate to and do not define, limit, or otherwise restrict the Specification text. Underlining or capitalizing of any words in the text does not signify or mean that such words convey special or unique meanings having precedence over any other part of the Contract Documents. Specification text shall govern over titling and shall be understood to be and interpreted as a whole. The order of Articles, Paragraphs, Subparagraphs, and Sub-subparagraphs in the Specifications text is defined by the sequence of indentations.
- K. Substantial Completion Defined:** “Substantial Completion” of the Work is the status, as reviewed by the Owner, when construction is sufficiently complete, in accordance with the Contract Documents, so Owner can occupy or utilize the Work for the use for which it is intended.

**PART 2 - PRODUCTS** (Not Applicable)

**PART 3 - EXECUTION** (Not Applicable)

END OF SECTION

**SECTION 01 17 00**

**ABBREVIATIONS**

**PART 1 - GENERAL**

1.01 Drawings and general provisions of the Contract, including other Division 01 Specification Sections and other technical Specification Sections apply to this Section. Abbreviations in Drawings and Specifications shall be interpreted according to recognized and well-known technical, industry, or trade meanings.

1.02 TRADE ABBREVIATIONS include but are not limited to the following:

AA	Aluminum Association
AABC	Associated Air Balance Council
AAMA	Architectural Aluminum Manufacturers Association
AASHTO	American Association of State Highway and Traffic Officials
ACI	American Concrete Institute
ADC	Air Diffusion Council
AEIC	Association of Edison Illuminating Companies
AFBMA	Anti-Friction Bearing Manufacturers Association
AFI	Air Filter Institute
AGA	American Gas Association
AGMA	American Gear Manufacturers Association
AIA	American Institute of Architects
AIMA	Acoustical and Insulating Materials Association
AISC	American Institute of Steel Construction, Inc.
AISI	American Iron and Steel Institute
AMCA	Air Moving and Conditioning Association, Inc.
ANSI	American National Standards Institute
ARI	Air Conditioning and Refrigeration Institute
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASSE	American Society of Sanitary Engineers
ASTM	American Society for Testing and Materials
AWPA	American Wood Preservers Association
AWPB	American Wood Preservers Bureau
AWPI	American Wood Preservers Institute
AWS	American Welding Society
AWWA	American Water Works Association
CBM	Certified Ballast Manufacturers
CDA	Copper Development Association
CGA	Compressed Gas Association
CISPI	Cast-Iron Soil Pipe Institute

CS	Commercial Standard, US Department of Commerce
CTI	Cooling Tower Institute
DEMA	Diesel Engine Manufacturers Association
DOD-	Department of Defense (leading symbol)
EIA	Electronic Industries Association
ETL	Electrical Testing Laboratories
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
Fed Spec	Federal Specification or Standard
FIA	Factory Insurance Association
FM	Factory Mutual
HI	Hydraulic Institute
IEEE	Institute of Electrical and Electronic Engineers
IES	Illuminating Engineering Society
IPCEA	Insulated Power Cable Engineers Association
ISO	International Standards Organization
MIL	Military Specification or Standard (leading symbol)
MSS	Manufacturers Standardization Society
NAAMM	National Association of Architectural Metal Manufacturers
NAFM	National Association of Fan Manufacturers
NBS	National Bureau of Standards
NEBB	National Environmental Balancing Bureau
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NFC	National Fire Code
NFPA	National Fire Protection Association
NSF	National Sanitation Foundation
NWWDA	National Wood Window and Door Association
OSA	Office of the State Architect
PDI	Plumbing and Drainage Institute
PS	Product Standard, US Department of Commerce
REA	Rural Electrification Administration
RIS	Redwood Inspection Service
SAE	Society of Automotive Engineers
SDI	Steel Door Institute
SFM	State Fire Marshal
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SSPC	Steel Structures Painting Council
UL	Underwriters' Laboratories, Inc.
WCLIB	West Coast Lumber Inspection Bureau
WI	Woodwork Institute
WWPA	Western Wood Products Association

1.03 SPECIFICATION TEXT ABBREVIATIONS include but are not limited to the following. Abbreviations used on drawings are listed on drawings.

AMP or amp	Ampere
CFM or cfm	Cubic feet per minute
FPM or fpm	Feet per minute
FPS or fps	Feet per second
GPM or gpm	Gallons per minute
Kip or kip	Thousand pounds
Ksi or ksi	Thousand pounds per square inch
Ksf or ksf	Thousand pounds per square foot
KV or kv	Kilovolt
KVA or kva	Kilovolt amperes
KW or kw	Kilowatt
KWH or kwh	Kilowatt hour
LF or lf	Linear foot
MPH or mph	Miles per hour
PCF or pcf	Pounds per cubic foot
PSF or psf	Pounds per square foot
PSI or psi	Pounds per square inch
SF or sf	Square foot
SY or sy	Square yard

**PART 2 - PRODUCTS** (Not applicable to this Section)

**PART 3 - EXECUTION** (Not applicable to this Section)

END OF SECTION

**SECTION 01 19 20**

**PROJECT MEETINGS**

**PART 1 - GENERAL**

- 1.01 Drawings and general provisions of the Contract, including other Division 01 Specification Sections and other technical Specification Sections apply to this Section.

**PART 2 - PRODUCTS** (Not Applicable to This Section)

**PART 3 - EXECUTION**

3.01 PROJECT MEETINGS:

- A. **Attendees:** Unless otherwise specified or required by Owner, all meetings shall be attended by Owner, Contractor and Architects as allowed by Architects Scope of Services. Subcontractors may attend the meetings when involved in matters to be discussed or resolved but only when requested by the Contractor.
- B. **Meeting Records:** The Contractor will record minutes of each meeting and furnish copies within 7 calendar days to the Owner, Architect, and other attendees.
- C. **Meeting Schedule:** Dates, times, and locations for the various meetings shall be agreed upon and recorded at preconstruction conference. Thereafter, changes to schedule shall be agreed between Owner and Contractor, with appropriate written notice to all necessary or appropriate parties.

3.02 PRECONSTRUCTION CONFERENCE:

- A. **General:** Prior to issuance of Notice to Proceed, a pre-construction conference shall be held at location, date, and time designated by the Owner.
- B. **Agenda:** Matters to be discussed or resolved and instructions and information to be furnished include but are not limited to:
  - 1. Schedule of progress meetings.
  - 2. Project schedule and schedule of values submitted by Contractor.
  - 3. Communication procedures between the parties.
  - 4. The names, addresses, and telephone numbers of all those authorized by the Contractor to act for him in emergencies.
  - 5. Construction permit requirements, procedures, and posting.
  - 6. Date of Start of Work.
  - 7. Forms and procedures for Contractor's submittals.
  - 8. Change Order forms and procedures.

9. Payment application forms and procedures.
10. Contractor's provisions for barricades, traffic control, utilities, sanitary facilities, and other temporary facilities and controls.
11. Consultants and professionals employed by Owner and their duties.
12. Construction surveyor and initiation of surveying services.
13. Testing Laboratory or Agency, and testing procedures.
14. Warranties and guarantees.
15. Other administrative and general matters as needed.
16. RFI procedures.
17. Substitution procedures.
18. Submittal procedures.
19. 3 (Three) week look ahead schedule.
20. Submittal schedule.

3.03 CONSTRUCTION PROGRESS MEETINGS: Progress meetings shall be held according to the agreed schedule. All matters bearing on progress and performance of the Work since preceding progress meeting shall be discussed and resolved including, without limitation, any previously unresolved matters, deficiencies in the Work or the methods being employed for the Work, and problems, difficulties, or delays which may be encountered.

3.04 SPECIAL MEETINGS: On appropriate notice to other parties, special meetings may be called by the Owner. Special meetings will be held where and when designated by the Owner.

END OF SECTION

**SECTION 01 25 00**

**CONTRACT MODIFICATION PROCEDURES**

**PART 1 - GENERAL**

1.01 Drawings and general provisions of the Contract, including other Division 01 Specification Sections and other technical Specification Sections apply to this Section.

1.02 DEFINITIONS

**A. The terms ASI and Bulletin** are synonymous. Both may be used to modify the scope of the work. Neither term has precedence over the other.

1.03 ADMINISTRATIVE REQUIREMENTS FOR CHANGES IN THE WORK

**A. Contract Requirements for Changes in the Work:** Comply with provisions of the General Provisions of the Contract.

**B. Administrative Requirements for Changes in the Work:** All changes to approved Drawings and Specifications shall be made by Bulletin or ASI.

1. The Architect will prepare and issue a Bulletin/ASI on which the scope of the change is defined.
2. Proposed Changes issued by Architect are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.

**C. Changes in scope** or time may also be requested by Owner.

**D. Change Order Forms:** Form as agreed to with Owner.

1.01 CHANGE ORDER PROPOSAL

**A. Within 10 calendar days** upon receiving a Bulletin/ASI or Owner change the Contractor may prepare and submit a change order proposal to Owner, describing the proposed change and its full effect on the Work, with a statement describing the reason for the change, and a full description of effects on the Contract Sum, Contract Time, related Work and work being performed under separate contracts.

**B. Change order proposals** shall be dated and sequentially numbered.

**C. Contractor is responsible for providing** full information required for evaluation of proposed changes and to substantiate costs of changes in the Work.

1. Document each quotation for a change in Contract Sum and Contract Time, with sufficient data to allow evaluation of the quotation.
2. Provide additional data to support computations such as but not limited to:
  - a) Quantities of products, labor and equipment.
  - b) Taxes, insurance and bonds.
  - c) Overhead and profit.
  - d) Justification for change in Contract Time, if claimed. For each proposed contract modification that affects contract time, prepare a time-impact analysis to demonstrate the effect of the proposed change on the overall project schedule. Submit analysis with each proposal request.
  - e) Credit for deletions from Contract, similarly documented.
  - f) Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
  - g) Indicate applicable taxes, delivery charges, equipment rental and amounts of trade discounts.
  - h) Include costs of labor and supervision directly attributable to the change.
  - i) Include, if any, changes to the construction schedule. Use available total float before requesting an extension of the Contract Time.

**D. Cost and Time Resolution:** If amounts for changes in Contract Sum and Contract Time cannot be agreed upon by Owner and Contractor, amounts shall be resolved in accordance with provisions of the General Provisions of the Contract for resolution of disputes and the following:

1. Contractor shall keep accurate records of time, both labor and calendar days, and cost of materials and equipment.
2. Contractor shall prepare and submit an itemized account and supporting data after completion of changed Work, within the time limits indicated in the General Provisions of the Contract.
3. Contractor shall provide full information as required and requested, for Owner to evaluate and substantiate proposed costs and time for the change in the Work.
4. When Owner and Contractor determine mutually-acceptable amounts for changes in Contract Sum and Contract Time, a Change Order shall be executed for these amounts.
5. Owner shall have the right to audit Contractor's invoices and bid quotations to substantiate costs for Change Orders.

1.05 CHANGE ORDER REVIEW AND APPROVAL

**A. Change Order Preparation, General:**

6. In response to each approved Change Order Proposal, Contractor shall submit a change order for review by Owner.
7. In accordance with General Provisions of the Contract, the Owner will review the Contractor's Change Order Proposal, confirm the scope of the proposed change and determine with the Contractor the acceptable amounts, if any, for changes in the Contract Time and the Contract Sum.
8. The Owner shall review, and either sign the Change Order or return the Change Order to the Contractor with comments.
4. Distribute approved Change Orders to necessary parties.

**B. Execution of Change Orders:** Upon approval of the Change Order by Owner, Contractor shall promptly execute the change in the Work.

**C. Schedule of Values:** Contractor shall promptly revise the Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjustment to the Contract Sum.

**D. Schedules:** Contractor shall promptly revise progress schedules to reflect approved changes in Contract Time, revising sub-schedules to adjust time for other items of Work as may be affected by the change. Contractor shall submit revised schedules at the next Application for Payment following approval and acceptance of the Change Order.

**PART 2 - PRODUCTS**

Not applicable to this Section.

**PART 3 - EXECUTION**

Not applicable to this Section.

END OF SECTION

**SECTION 01 26 00**

**CONTRACTOR'S REQUESTS FOR INFORMATION**

**PART 1 - GENERAL**

- 1.01 Drawings and general provisions of the Contract, including other Division 01 Specification Sections and other technical Specification Sections apply to this Section.
- 1.02 DEFINITION: Request for Information, a document submitted by the Contractor requesting clarification of a portion of the contract documents, hereinafter referred to as RFI.
- 1.03 CONTRACTOR'S REQUESTS FOR INFORMATION:
- A. Immediately when the Contractor is** unable to determine from the contract documents, the exact material, process or system to be installed and only when the need for interpretation of the Contract Documents is absolutely necessary, Contractor shall prepare and submit an RFI to the Architect. Submit all RFI's in a timely manner so as not to cause delay in the work.
  - B. Contractor shall endeavor** to keep the number of RFI's to a minimum.
  - C. RFI's shall be submitted** on a form approved by, the Architect. Forms shall be completely filled in, and if prepared by hand, shall be fully legible after copying by xerographic process, scanning and emailing. Each page of attachments to RFI's shall be legible and bear the RFI number in the lower right corner. Number each page of the RFI and show the total number of pages contained in the RFI, including attachments on the cover of the RFI.
    - 1. RFI Submittals that are received by Architect after 3pm will be logged in on the next business day.
    - 2. Contractor shall submit one question per each RFI request. Filled out RFI form completely. RFI shall include a copy of proposed product, shop drawings and/or literature and all else required in this Section; Contractor will be notified of the reviewed RFI.
  - D. Contractor shall comply with** requirements and protocols for Contractor Information Management Software (CIMS) defined in Project Requirements.
  - E. RFI's from subcontractors** or material suppliers shall be submitted through, reviewed by, placed on approved RFI form and signed by the Contractor prior to submittal to the Architect. Architect will only process RFI's received from General Contractor.

- F.** Contractor shall carefully study the contract documents to assure that the requested information is not available therein. Contractor shall review and verify validity of each RFI and determine if RFI should be forwarded to Architect. RFIs which request information available in the contract documents will not be answered by the Architect.
- G.** Provide a suggested solution for each RFI question.
- H.** RFIs shall not be used for the following purposes:
1. To request approval of submittals
  2. To request approval of substitutions,
  3. To request changes which entail additional cost or credit.
  4. To differentiate methods of performing work than those drawn and specified.
  5. Request approval of means and methods.
  6. Request approval of a change order.
  7. Request adjustments in contract time or amount.
- I.** Architect will review each RFI and determine action required. Architect's response may include a request for additional information, in which case Architect's time for response will end with request and start again when RFI is resubmitted with requested information.
- J.** On receipt of Architect's action, immediately review response and notify Architect within one day if Contractor disagrees with response. After acceptance of response, update the RFI log and distribute the RFI response to affected parties.
- K.** In the event the Contractor believes that a clarification by the Architect results in additional cost, Contractor shall not proceed with the work indicated by the RFI until a change order is prepared and approved. RFI responses shall not be construed as approval to perform additional work.
- L.** Unanswered RFIs will be returned with a notation: Not Reviewed.
- M.** Contractor shall prepare and maintain a log of RFIs, including outstanding RFIs and at any time requested by the Architect, Contractor shall furnish copies of the log. Contractor shall note all unanswered RFIs in the log.
- N.** Contractor shall allow for 7 calendar days review and response time for RFIs.

**PART 2 – PRODUCTS** - Not applicable to this Section.

**PART 3 – EXECUTION** - Not applicable to this Section.

END OF SECTION

**SECTION 01 28 00**

**FIELD ENGINEERING**

**PART 1 - GENERAL**

- 1.01 Drawings and general provisions of the Contract, including other Division 01 Specification Sections and other technical Specification Sections apply to this Section.

**PART 2 - PRODUCTS** (Not Applicable)

**PART 3 - EXECUTION**

- 3.01 LAYOUT THE WORK: Contractor shall provide necessary Engineering and Surveying to layout the Work, set and maintain grades, lines, levels, and positions throughout the site and building. Before beginning the Work, locate all general reference points, establish monuments, and take action as necessary to prevent their destruction and maintain them for duration of the work; then layout lines, elevations, and measurements for the entire Work including buildings, on the Drawings and accept responsibility for all errors resulting from failure to so verify. Establish permanent monuments on curbs, manholes, or pavements, or with concrete embedded steel pipe with lead plug and brass nail, as approved. Maintain marks and elevations as necessary on each floor level including basement and roofs of building as the work progresses.
- 3.02 LOCATION OF EXISTING CONSTRUCTION: The existence and location of existing construction indicated are not guaranteed. Before beginning work, investigate and verify the existence and location of existing construction, utilities and other construction affecting the work. Before construction, investigate and verify the location and points of connection of all utility services.

END OF SECTION

**SECTION 01 29 73**

**SCHEDULE OF VALUES**

**PART 1 - GENERAL**

1.01 Drawings and general provisions of the Contract, including other Division 01 Specification Sections and other technical Specification Sections apply to this Section.

1.02 SCHEDULE OF VALUES:

**A. Submit to Owner for approval** within 10 days of Date of Notice to proceed, a breakdown to the total contract price showing the value assigned to each part of the work. List items in accordance with the Specifications index. Use AIA G703 form.

1. Include all necessary site work beyond the building line to assist Owner in the determination of site improvement costs.

**B. Support Values given** with data substantiating their correctness upon Owner's request.

**C. Use Schedule of Values** for Contractor's application for payment.

1.03 PREPARING SCHEDULE OF VALUES:

**A. Itemize Separate Line Item Cost for each of the following cost items:**

1. Performance and payment bonds.
2. Field supervision and layout.
3. Temporary facilities and controls.
4. Each Section of work in the Specifications.

**B. For Each Line Item** which has installed value of more than \$10,000.00, break down cost to list major products or operations under each item.

**C. Round off Figures** to nearest dollar.

**D. Keep Schedule of Values** up to date as the work progresses. Include current schedule of values with each application for payment.

1. Indicate percent complete for each line item as work progresses.
2. Differentiate between items stored on site and items store off site.
3. Indicate both original base contract amount and current total contract amount.

1.04 REVIEW AND RESUBMITTAL: After review and comment by Owner, revise and resubmit schedule of values.

1.05 APPLICATION FOR PAYMENT

- A. **Make each Application** for Payment consistent with previous applications and payments.
- B. **Submit a ‘Pencil Draft’** minimum of 1 week in advance of submitting Application for Payment. Receive comments from Owner and revise Application for Payment prior to submitting. Coordinate time of ‘Pencil Draft’ review to occur during a regular ‘Progress Meeting’.
- C. **Submit Application for Payment** on a day each month agreed to by Owner and Contractor.
- D. **Use AIA Document G702** and AIA Document G703 Continuation Sheets as form for Applications for Payment.
- E. **Complete every entry** on form. Notarize and execute directly on the first page of each copy of the pay application itself by a person authorized to sign legal documents on behalf of Contractor. Notarization on “loose leaf certificates” is not acceptable.
- F. **Submit the number of** applications agreed to with Owner, signed and notarized, by a method ensuring receipt. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- G. **Submit waivers and releases** from every entity that is lawfully entitled to file a lien arising out of the Contract and related to the work covered by the payment.
- H. **Submit information to substantiate** dollar amounts being requested on application.

END OF SECTION

**SECTION 01 30 20**

**CONSTRUCTION PROGRESS DOCUMENTATION**

**PART 1 - GENERAL**

1.01 Drawings and general provisions of the Contract, including other Division 01 Specification Sections and other technical Specification Sections apply to this Section.

1.02 CONSTRUCTION PROGRESS SCHEDULE

**A. Construction Progress Schedule:** Within 10 Days of Date of Notice to proceed submit Construction Progress Schedule using software program designed for such a purpose, as acceptable to Owner.

**B. Definitions:**

1. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring and controlling the construction project. Activities included in a Construction Schedule consume time and resources.
2. CPM: Critical Path Method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships.
3. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall project duration and contains no float.
4. Float: The measure of leeway in starting and completing an activity. Float time belongs to Owner.
5. Major Area: A story of construction, a separate building or a similar significant construction element.
6. Milestone: A key or critical point in time for reference or measurement.

**C. Format:** Bar chart. Include listings in chronological order according to the start date for each activity.

1. Schedule should begin at date of notice to proceed and continue to date of final completion.
2. Identify each activity with the applicable Specification Section Reference Number.
3. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
4. Identify work of separate stages and other logically grouped activities.
5. Include conferences and meetings in schedule.
6. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.

7. Include due dates from submittal schedule.
8. Coordinate content with Schedule of Values specified in Section 01 29 73 Schedule of Values.
9. Provide legend for symbols and abbreviations used.
10. Coordinate preparation and processing of schedules and reports ongoing with construction activities and with scheduling and reporting of separate contractors.
11. Include anticipated date of Substantial Completion.
12. Identify Critical Path.
13. Float Time. Do not sequester float time through strategies such as extending activity durations to consume available float time associated with no critical activities to cause the work to become critical. Float time shall be clearly indicated in the schedule.
14. Final Completion Date shall not be changed, unless specifically authorized by Change Order.
15. Dates required for Owner-furnished contractor-installed items and Owner-furnished Owner-installed items.
16. Treat each story or separate area as a separate numbered activity for each principal element of the work.
17. Use “one workday” as the unit of time. Include nonworking days and holidays in the schedule.
18. Include long lead times and delivery dates.
19. Include fabrication times.

**D. Schedule Size:** When printed, maximum 22" x 17" or width as necessary. Text shall be legible when printed and minimum 8.5 point font size.

1. Sheets shall fold neatly to multiple of 8-1/2" x 11" for filing.
2. Scale and spacing in content shall allow for notations and revisions.
3. Include each submitted schedule also in PDF digital form for use by Project team.

**E. Weather:** Contractor’s baseline schedule shall incorporate anticipated weather days as agreed to with Owner during the period from initial site work through the Date of Substantial Completion, affecting any work on the critical path. Unused weather allowance days become jointly owned.

**F. Contractor shall provide an updated** a three-week look-ahead schedule showing the projected scheduled work for a period of no less than 3 weeks from the date of the current Progress Meeting. Projected dates shall be based on actual dates of work finished prior to the date of the current Progress Meeting. The schedule shall show summary of non-critical activities and each critical activity. Present look ahead schedule at each Progress Meeting.

1.03 REVIEW AND EVALUATION OF SCHEDULE

- A. **Submit preliminary schedule** to Owner for Owners Review.
- B. **Review:** Participate in joint review and evaluation of schedule with Owner as necessary or requested.
- C. **Revision:** After review, revise schedule as necessary as result of review, and resubmit within 5 working days.

1.04 UPDATING CONSTRUCTION PROGRESS SCHEDULE

- A. **Maintenance of Construction Progress Schedule:**
  - 1. Maintain and Update schedules weekly to record actual start and finish dates of completed activities.
  - 2. Indicate progress of each activity to date of revision, with projected completion date of each activity.
  - 3. Annotate diagrams to graphically depict current status of Work.
  - 4. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
  - 5. Indicate changes required to maintain Date of Completion.
  - 6. Submit reports required to support recommended changes.

1.05 DISTRIBUTION OF SCHEDULE

- A. **Distribution of Schedule:**
  - 1. Distribute copies of updated schedules to Project Team and to Subcontractors and suppliers.
  - 2. Instruct recipients to promptly report, in writing, problems anticipated by projections shown in schedules.
  - 3. Present update schedule at each Progress Meeting.

**PART 2 - PRODUCTS**

Not Applicable to this Section.

**PART 3 - EXECUTION**

3.01 CORRECTIVE ACTIONS

- A. **Contractor agrees that** whenever it becomes apparent to the Owner from the current Construction Schedule that the contract completion date will not be met, due to activity or inactivity of construction; the Contractor, within 5 working days

of Owners request, shall take corrective actions, at no additional cost or time to Owner.

- B. In addition, prepare a** Recovery Schedule to demonstrate how the corrective actions will recover lost time, and how the project will be completed by the original agreed upon completion date. Prior to revising the Construction Schedule the Recovery Schedule shall be approved by the Owner.
  
- C. Contractor will bear** all expenses associated with the corrective action, including overtime, additional costs and time for testing and inspections on an overtime basis, cost for jurisdictional inspections, added field observation time by Owner's design and consulting team and professional design time to revise design to meet an accelerated schedule.

END OF SECTION

**SECTION 01 31 00**

**PROJECT COORDINATION**

**PART 1 - GENERAL**

- 1.01 Drawings and general provisions of the Contract, including other Division 01 Specification Sections and other technical Specification Sections apply to this Section.
- 1.02 **CONTRACTOR'S RESPONSIBILITIES:** Be responsible for all project coordination, including coordination of separate contracts assigned to Contractor. Coordinate work of all Subcontractors. Establish on-site lines of authority and communication. Schedule and conduct progress meetings with Owner and other concerned parties. Provide and maintain a sufficient crew necessary to coordinate and execute work and to meet the required completion date.
- A. Observe work of each** subcontractor to monitor compliance with schedule coordination with other trades and requirements of the Contract Documents.
- B. Within 10 (ten) days** of Date of Notice to Proceed, contractor shall assemble and submit 3 (three) complete sets of Contract Documents that represent the agreement between Owner and Contractor. One set shall be retained and kept up to date by the Contractor at the jobsite, one set provided to the Owner and one set provided to the Architect. Identify all documents as “Contract Documents” and indicate date of contract.
1. Maintain the current set of Contract Documents at the site at all times. Maintain additional, copies of these documents to execute the work.
- 1.03 **ERRORS, OMISSIONS AND DISCREPANCIES:** The General Conditions of the Contract impose a responsibility on the Contractor to carefully study and compare the Contract Documents, and to promptly upon discovery of any conflict, inconsistency or omission discovered, to submit an RFI.
- A. The Contractor shall require** each Subcontractor to read and comply with the requirements of this Section. Compliance with these procedures does not obligate the Contractor, or his Subcontractors, to correct the problems that are identified without written instructions from the Owner.
- B. Require each subcontractor to:**
1. Coordinate work of his own employees and suppliers.
2. Expedite his work to assure compliance with schedules.
3. Coordinate his work with that of other subcontractors.
4. Prepare sub-schedules to comply with Critical Path.
5. Monitor schedules as work progresses.

6. Immediately upon discovery of conflicts submit written RFI.
  - C. **Provide necessary** supervision to regularly coordinate and check layout and installation of work between all trades before and during execution of work.
  - D. **Require all subcontractors** to read, understand and comply with all applicable requirements of the Contract Documents. Review documents with subcontractors to assure they are aware of all applicable requirements and to determine if problems or conflicts exist between contract requirements and subcontractor's intended work plan. Resolve all issues to the satisfaction of the contract requirements without additional cost or time to contract.
  - E. **Prepare and furnish information** that is necessary to adjust, move or relocate existing utility structures, utility poles, lines, services or other utility appurtenances located in or affected by construction. Coordinate with utility companies and authorities having jurisdiction. Obtain necessary approvals and permits for work in public right of way. Maintain existing services in continuous operation as necessary and required.
  - F. **Take field measurements** as required to fit the work properly. Recheck measurements before fabricating and installing each product. Where portions of the work are indicated to fit to other construction, field verify dimensions before preparing shop drawings and fabrication. Where field dimensions cannot be verified due to progress of the work, coordinate with necessary trades to determine required dimensions and proceed with shop drawings. Coordinate with field construction as work progresses to assure required field dimensions. Allow for fitting and trimming in field installation.
  - G. **Coordinate fabrication** schedule with construction progress to avoid delaying the work.
  - H. **Verify space requirements** and dimensions of items shown diagrammatically on Drawings prior to order and fabrication.
  - I. **Review field conditions** with Contract Documents. Immediately on discovery of the need for clarification of the Contract Documents; submit a written RFI.
- 1.04 Upon Signing the Agreement with Owner, Contractor declares that he has reviewed the Contract Drawings, all Addenda, has read and understands the requirements of the Project Requirements, General Requirements; the technical Sections of the Specifications describing work categories for which the undersigned is directly responsible; and each of the related Sections listed which include requirements for cooperation, coordination or compliance with portions of the referenced Sections.

- 1.05 The Contractor further declares exception as may be noted in the bid form, that he has no objections to the materials, methods, conditions and details of their installation and their relationship to the work of other trades; that the materials and methods of their installation are appropriate for the purpose established by the Contract Documents; in accordance with applicable codes; and that this can be accomplished in a workmanlike manner and complete and functional without additional expense to Owner.

END OF SECTION

**SECTION 01 33 00**

**SUBMITTALS**

**PART 1 - GENERAL**

- 1.01 Drawings and general provisions of the Contract, including other Division 01 Specification Sections and other technical Specification Sections apply to this Section.
- 1.02 Deferred Submittals and Design Build items are the same thing and scope of responsibility. The teams are used interchangeably.
- 1.03 DESIGN-BUILD ITEMS: Provide design-build items numerated on the drawings.
- A. Contractor shall provide** design, engineering, fabrication and installation of design-build items and their connections to building infrastructure within the physical limitations and design parameters indicated on the Contract Documents. Submittals shall be signed by the appropriate Civil, Structural, Mechanical, Electrical or Plumbing Engineer licensed to practice in California, who is in responsible charge of the design work.
  - B. Accept design, engineering** and construction responsibility for Design Build items.
  - C. Contractor shall investigate** and determine all requirements of Governing Authorities for Design Build/Deferred Submittals.
- 1.04 Submittals are not part of the Contract Documents. They are part of the contractor's workplan and demonstrate contractor's understanding of how the contractor intends to construct the work. Contractor is responsible for the content of submittal both before and after design consultant review.
- 1.05 GENERAL SUBMITTAL REQUIREMENTS: Submit to the Architect (1) electronic copy and Owner (1) electronic copies of all submittals, required herein, under other Sections, or by Modifications except as otherwise indicated, specified, or directed. Submittals shall be correctly prepared, identified, and transmitted as specified herein or as otherwise directed. Prepare submittals according to the requirements herein and as may be specified in other Sections. Submittals that are received after 3pm will be logged in on the next business day.
- A. Contractor shall provide** all information necessary, as requested by Architect, to demonstrate compliance with requirements.
  - B. KTGY will only accept** submittals from Contractor. Submittals received from other parties will not be reviewed.

- C. KTG Y and KTG Y’s Design Consultants** will only review submittals required by the Construction Documents and only within the limits of their respective design scope.
- D. KTG Y and its Design Consultants** do not stamp or mark comments directly on submittals. All comments and stamps will be applied to KTG Y’s submittal review form and returned with the submittal.
- E. Conformance:** Work shall conform to requirements of Contract Documents unless revised by Contract Modification.
- F. Contractor shall comply** with requirements for Contractor Information Management Software (CIMS) as defined in Section “Project Requirements”.
- G. Contractor is responsible** for providing complete and accurate information in all submittals.

  - 1. Include information unique to this project, including required dimensions and clearances, performance characteristics and capabilities, and/or wiring diagrams and controls.
  - 2. Delete information that is not applicable to project.
- H. Submittals shall not be used for the following:**

  - 1. Substitution requests.
  - 2. Approval of means and methods.
- I. Do not include MSDS** or other safety data sheets in submittals. Submittals containing such safety information will be rejected.
- J. Schedule of Submittals:** Within 10 days of the date of notice to proceed, Contractor shall provide a schedule of submittals which includes an itemized listing of all required submittals with a scheduled date for each submittal. Submittal schedule shall indicate submittals for long lead order and delivery items. Coordinate preparation and processing of each submittal with lead times, fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity. Extension of the Contract Time will not be granted because of the Contractor's failure to make timely and correctly prepared and transmitted submittals with a reasonable time allowance for the review periods. Submittals not required by Contract Documents will not be reviewed.
- K. Transmittals:** Deliver each submittal with Transmittal. Submittals received directly from Subcontractors, suppliers, fabricators or manufacturers will not be reviewed. In each transmittal state the Specification Section, to which the submittal pertains.

- L. Deviations:** Indicate in the submittal of all deviations from the requirements of the Contract Documents. Fully describe each deviation and all other changes required to correlate the Work including the related Work. State in writing the Contractor's assumption of all costs for the deviation and of all related costs. Contractor is responsible for coordination of all deviations with all related trades. Include acknowledgement by the manufacturer that such deviations are acceptable with warranty requirements and appropriate for the project.
- M. Contractor's Review Stamp:** Every submittal shall bear the Contractor's review stamp, dated and signed by Contractor in every case. Regardless of the written content of the stamp, contractor, owner agree contractors review stamp shall mean the following: Contractor (a) has reviewed and checked the submittal and has coordinated the submittal contents with requirements of the Work and Contract Documents including related Work, (b) determined and verified quantities, field measurements, construction criteria, materials, equipment, catalog numbers and identifications, and similar data (c) states that Work illustrated or described in the submittal is recommended by Contractor and that Contractor's warranty will fully apply thereto, (d) all variations from specified products and materials are indicated/highlighted and the products and materials in the submittals are equal to or better than products and materials specified as defined by section 01 60 00 Materials and Equipment. Architect will return, unstamped/unsigned submittals unreviewed. Non compliant submittal may cause Project delays caused by Contractor.
- N. Corrections and Resubmittals:** For submittals marked as rejected or revise and resubmit, Contractor shall make necessary corrections and resubmit corrected submittals. Contractor shall direct specific attention in writing to all revisions other than corrections called for on previous submittals. Submittals marked as “furnish as noted”, “furnish as corrected”, “furnish as commented” language shall not be resubmitted. Make resubmittals in same form and number as initial submittal. Contractor shall resubmit full submittals not partial or pieces of prior submittals. Do not resubmit copies of previous submittals with review comment or action stamps.
- O. Check of Returned Submittals:** Contractor shall check and review the submittals returned. The Contractor's failure to request clarification on any submittal before starting of any Work covered by a returned submittal constitutes a waiver by the Contractor of claims resulting from required corrections.
- P. Review Of Submittals By The Architect:** Submittals will be reviewed with reasonable promptness but only for conformance with the design intent indicated in the Contract Documents. Review of a separate item as such will not indicate review of the assembly in which the item functions. Review of submittals shall not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents, nor shall review relieve the Contractor of responsibility for errors or omissions in the submittals or for the accuracy of

dimensions and quantities, the adequacy of connections, and the proper and acceptable fitting, execution, functioning, and completion of the Work.

1. Submittals that are received by Architect after 3pm will be logged in on the next business day.
2. When professional certification or performance criteria of material, systems or equipment is required by the Contract Documents, the Architect and Architect's Consultants shall be entitled to rely upon the accuracy and completeness of such calculations and certifications accompanying submittals.
3. Architect and Architect's Consultants will review initial submittal and one resubmission. After two submissions, without acceptance, contractor will bear expense for additional review of that submittal, through deductive change order.
4. In review of submittals, Architect will not provide information such as horizontal and vertical dimensions that can easily be derived, by contractor, from study of construction documents. Architect will not provide information of field conditions that can be derived by field observation and measurement.
5. Contractor will provide additional information requested by Architect to clarify contractor's intent to complete the work as indicated.
6. No review action, implicit or explicit, on submittals, shall be interpreted as authorization for changes in the work. Changes in the work shall only be authorized by modification. Contractor assumes responsibility for proceeding with work based on reviewed submittals and shall be responsible for all corrections and modifications necessary to bring non-compliant work in compliance with Contract Documents at no additional cost or time to Owner.

**Q. Design-Build Submittals Review Process:**

1. Submit engineered design build submittals and data illustrating intent to meet design and performance requirements to Architect for review. Resubmit as necessary.
2. Agency Submittal: Only after review by appropriate Design Consultant, submit engineer stamped and signed calculations, drawings and other design data to Governing Agencies for review and approval.
3. Allow for Design Consultant review time, Contractor review time and Governing Agency review time for back deferred submittal in Construction Schedule.

**R. Incomplete or Inadequate Submittals**, including those not correctly transmitted, titled, and identified, or not bearing Contractor's review stamp will be returned to the Contractor without review.

- S. Interrelated Submittals:** Except where the preparation of submittal information is dependent upon acceptance of any prior submittal, make every effort to provide submittals pertaining to the same class or portion of Work simultaneously, so Architect may review concurrently. Coordinate with all trades necessary to compile all submittal items required by an individual spec section into a single submittal to greatest extent possible. Do not group unrelated submittals from different spec sections under a single submittal. Submit only what is required by each specification section. Architect reserves the right to withhold action on a submittal until related submittals are received. Contract time will not be extended for time to obtain related submittals.
- T. Expense:** All cost for the preparation compiling, correction, delivery, handling and distribution and return of submittals shall be borne by Contractor. No additional cost or time shall be allowed due to contractor's lack of timelines in preparing or distributing submittals.
- U. Provide each submittal** with a sequential number based on applicable spec section with submittal identifier and revision identifier.
- V. Rejection of a portion** of a submittal is a rejection of the entire submittal. Contractor to resubmit full submittals that have been rejected.
- W. Verify that each submittal** is readable and will be readable after transmitting. Verify that shop drawings are drawn to scale and will be to scale after transmitting. Do not change sheet size, transmit actual size sheet of original submittal.
- X. For submittals with electronic** file size to large to transmit electronically establish a file sharing site for transmission of submittal.
- Y. Design-Build Submittals shall include not less than the following:**
1. Dimensioned plans, elevations and sections locating assembly components in relationship to each other and in relationship to contiguous building structure.
  2. Typical and special fabrication and installation details, including details of anchorage to supporting structure.
  3. Design criteria and calculations.
  4. Materials and finishes.

**PART 2 - PRODUCTS** (Not Applicable)

**PART 3 - EXECUTION**

- 3.01 Contractor is responsible for generating, processing, handling, submitting, reproducing, distributing all submittals, including complying with all requirements of Governing Authorities for design build, deferred approval submittals.
- A. KTGY can provide electronic files for Contractors use in preparation of Shop Drawings. Contractor will sign KTGY’s release letter prior to receiving files. KTGY will only provide raw plan and elevation background files.**
- 3.02 **SHOP DRAWINGS:** Prepare shop drawings complete including all dimensions, design criteria, materials, connections, bases, foundations, anchors, and the like, and further including such technical and performance data as is necessary to confirm the information in the Shop Drawings. Minimum drawings size 18 inches by 24 inches. Each Shop Drawing shall have an adequate title block showing the following identification:
- Name and address of the Work.
  - Name and address of the Contractor.
  - Name and address of the Subcontractor, Subsubcontractor, manufacturer, fabricator, supplier, or distributor, as applicable.
  - Date, scale of drawings, and identification number.
  - Reference specification section.
  - Logical sheet numbering, if more than one sheet is included.
- A. Initial and Resubmittals:** Submit Shop Drawings in PDF format with Transmittal sent electronically.
- B. Review of Shop Drawings:** The Architect will mark corrections, notations, on the submittal review letter and return submittal and letter to the Contractor.
- C. Final Distribution:** Furnish and distribute reviewed Shop Drawings as required for performance of the Work.
- D. Do not base Submittals** on reproductions of the Contract Documents. Submittals based upon provided CAD files shall not have any indication referencing the Architect or Owner or Architect’s consultants. Any submittals received bearing such information will be immediately returned without review. Contract Drawings, copied or marked to show Shop Drawing information are not acceptable. Direct copies of Architects or Architects design consultants drawings is not allowed.
- 3.03 **SAMPLES:** Unless otherwise specified, each sample submittal shall include not less than two complete sets of Samples. At least one set of reviewed Samples will be returned by Architect. Samples returned to Contractor may be installed in the Work if the location is recorded in the Record Drawings and the Samples bear temporary identification as such.

- A. **Submit Samples prepared** from same physically identical material or product proposed to be used for the work, cured and finished in manner specified. Show full range of color, texture and sheen variations occurring in product specified.
- B. **Attach label on** unexposed side of each Sample.
- C. **Where samples will be used** to determine the correct level and aesthetic of finished materials, continue to provide samples as necessary to obtain Architects acceptance of intended look and appearance. For materials with a variation in color, texture, finish, sheen, etc., regardless of minimum number of samples required, provide samples as necessary to show full range of variation in appearance of material.

### 3.04 PRODUCT AND EQUIPMENT DATA SUBMITTALS:

- A. **Product Data** shall include materials lists, catalogs, brochures, performance and technical data, service history, characteristics, and like information to fully describe the products covered by the submittal.
  - 1. Submittal Preparation: Bind submittal copies into one PDF file with a typed index listing the contents. Loose unbound or multiple PDF files submittals will be returned unreviewed. For each item listed, include the manufacturer's name and address, the trade or brand name, all conditions of manufacturer's guarantee and warranty, information to fully describe each item, and supplementary information as may be required for review. Mark and highlight cuts, brochures, and data to indicate the items proposed and the intended use.
  - 2. Product Data Submittals: Electronic copy will be returned to the Contractor marked to show the required corrections. If corrections are required, the final submittal shall be electronically corrected.
- B. **Equipment Data:** Submit complete technical, performance, and catalog information for every item of mechanical and electrical equipment and machinery proposed for installation in the Work, Deliver electronically indexed, and containing information and data as required in Paragraph "Product Data" above. Include information on performance and operating curves, ratings, capacities, characteristics, power efficiencies, manufacturers' standard guarantees and warranties with the terms and conditions fully described, and all other information to fully illustrate and describe the items as may be specified or required for approval. Submit in sets which cover complete systems or functioning units. Unless otherwise specified, submittals shall be as specified in Subparagraph "Product Data Submittals".

KTGY  
SOBOBA HORSESHOE VILLAGE – PHASE 2  
San Jacinto, California

SUBMITTALS  
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3.05 MANUFACTURERS' INSTRUCTIONS: As indicated submit manufacturers' installation instructions and directions for materials specified to be installed in accordance with such instructions to demonstrate the adequacy of the instructions. Furnish copies to all trades involved.

END OF SECTION



17911 Von Karman Avenue, Suite 200  
Irvine, CA 92614  
949.851.2133

## Submittal Review

To: (enter contractors name)

Date: (enter date)

From: KTGy

Project Name: Soboba Horseshoe Village –  
Phase 2

Reference Specification Section: (section number)

Project No.: 2025-0428

### Submittal No.: (enter submittal number and topic)

#	Comment
1.	
2.	
3.	
4.	
5.	

### Architect Review:

<input type="checkbox"/>	No Exception Taken	<input type="checkbox"/>	Revise and Resubmit
<input type="checkbox"/>	Furnish as Noted	<input type="checkbox"/>	Rejected
<input type="checkbox"/>	Processed Only	<input type="checkbox"/>	Submit Specified Item

Review is only for general conformance with the design intent shown in the Contract Documents. Comments made during this review do not relieve Contractor from compliance with the requirements of the Contract Documents. Review of a specific item shall not include approval of an assembly of which the item is a component. Contractor is responsible for; all dimensions; dimensions to be confirmed and correlated at the job site; field conditions; information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences and procedures of construction and coordination of the Work in a safe and satisfactory manner. KTGy is not responsible for and disclaims any representation, warranty, or accuracy of the content of submittals reviewed by KTGy.

By:

Return Date:

Comments:

**SECTION 01 41 00****REGULATORY REQUIREMENTS AND REFERENCE STANDARDS****PART 1 - GENERAL**

- 1.01 Drawings and general provisions of the Contract, including other Division 01 Specification Sections and other technical Specification Sections apply to this Section.
- 1.02 CODES AND STANDARDS:
- A. Requirements of Governing Authorities:** All pertaining statutes, ordinances, laws, rules, codes, regulations, standards, and lawful orders of Governing Authorities having jurisdiction of the Work of this Contract are hereby incorporated into the Contract Documents the same as if repeated in full herein and are intended wherever reference is made in either the singular or plural to Code or Building Code except as otherwise specified, including, but not limited to, those in the following listing. Where copies of Reference Standards are indicated and required as part of a required construction activity, obtain copies directly from publication source. Maintain a copy of all applicable regulations and reference standards at the project site. Contractor shall make available at the site such copies of the listed documents applicable to the Work, including mentioned portions of the California Code of Regulations (CCR). Governing Authorities include Property Owner Associations and Convents, Codes and Restrictions.
  - B. Comply with Referenced Standards** in effect as of date Plan Check Submittal.
  - C. In case of conflict** between reference standards, or reference standards and governing authorities, provide the most expensive requirements, at no additional cost to Owner.
  - D. Each entity engaged in** construction on project shall be familiar with Reference Standards applicable to its construction activity. Copies of applicable Reference Standards are not bound with the Contract Documents.
- 1.03 REFERENCE AND STANDARD TYPE SPECIFICATIONS: Specifying by reference to reference and standard type specification documents or to another portion of the Contract Documents shall be the same as if the referenced document or portion referred to were exactly repeated at the place where reference is made unless otherwise specified. If requested by client Contractor shall make available such copies of the Reference Standards at the project site.

END OF SECTION

**SECTION 01 45 00**

**QUALITY REQUIREMENTS**

**PART 1 - GENERAL**

- 1.01 Drawings and general provisions of the Contract, including other Division 01 Specification Sections and other technical Specification Sections apply to this Section.
- 1.02 GENERAL QUALITY CONTROL REQUIREMENTS:
- A. **General Test Requirements:** Materials to be furnished under the Contract are subject to testing and inspection for compliance with requirements of Drawings and Specifications.
  - B. **Independent Testing Agency** will be the licensed Testing Laboratory or Agency certified as meeting the requirements of ASTM D3666, D3740, E329, and E543 as applicable to the Work provided by the Owner, and referred to hereafter as the Testing Laboratory. Contractor will coordinate and cooperate with Owner's testing agency or laboratory. Provide access to work areas, materials and installation for testing.
  - C. **Soils or Foundation Engineer** will be the registered professional Geotechnical Engineer employed and paid by Owner. Contractor will coordinate and cooperate with Geotechnical Engineer.
  - D. **Disqualified Material:** Any material shipped or delivered to the site by the Contractor from the source of supply prior to having satisfactorily passed the required testing and inspection, or prior to the receipt of a notice from the Testing Laboratory or Geotechnical Engineer that such testing and inspection will not be required, shall not be incorporated in the work and removed from site immediately.
  - E. **Travel, lodging and meal** costs related to off-site inspection and testing of materials and fabrications, in excess of a 75 mile radius from the project site, shall be paid for by contractor through deductive change order.
  - F. **Independent testing agency** is not authorized to release, revoke, alter or enlarge requirements of the Contract Documents or approve or accept any portion of the work.
  - G. **Independent testing agency** shall not perform any duties of contractor.
- 1.03 COORDINATION OF TESTS AND INSPECTIONS: Contractor shall arrange for initiate and coordinate testing and inspections required by Contract Documents and public authorities having jurisdiction over the Work.

- A. **Notification:** Contractor shall notify the Testing Agency a sufficient time in advance of the manufacture of material to be supplied by him which, by requirements of the Contract Documents, must be tested at the source of supply in order that the Owner may arrange for the testing.
- B. **Provide an insulated curing** box with capacity for not less than twenty (20) concrete cylinders and relocate curing box and cylinders as rapidly as required in order to provide for progress of the work.
- C. **Coordinate sequence of** activities to accommodate Owners testing and inspection services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting. Schedule time for tests, inspections, obtaining samples and similar activities.
  - 1. By advanced discussion with the testing agency, determine the time required to perform its tests and to issue each of its findings. Provide all required time within the construction schedule.
  - 2. When the testing laboratory is ready to test according to the established schedule, but is prevented from testing or taking specimens due to incompleteness of the work, all additional charges for testing attributable to the delay will be back-charged to the contractor through deductive change order and shall not be borne by the Owner.
  - 3. All overtime costs required for testing and inspection shall be paid by Owner and deducted from monies due the contractor.
- D. **The Owner and their designated** representative shall be the only authorized persons empowered to direct tests to be made when it appears to be necessary to determine compliance or non-compliance to the requirements of the work.
- E. **If the contractor elects** to change material sources after mix designs, formulations and fabrications have been tested and inspected, the contractor shall reimburse the Owner for all additional costs incurred in the re-testing and re-inspection of materials, mixes, formulations and fabrications.
- F. **When no quality basis** is prescribed, the quality shall be in accordance with the best accepted practices of the construction industry for the locale of the project, for similar projects and in compliance with applicable codes, laws, rules and regulations of Governing Authorities.

#### 1.04 TEST SAMPLES AND PROCEDURES:

- A. **Test Samples:** Furnish and deliver Samples of materials to be tested at no extra cost or time to Owner or as dictated in the Contract between Owner and General Contractor. Test samples will be selected by the Inspector or Testing Laboratory and not by the Contractor.

- B. Test Procedures:** The Testing Laboratory shall tag, seal, label, record or otherwise suitably identify the materials for testing and no such materials shall be used in the Work until the test result reports are submitted and accepted, excepting only the materials specified to be placed or installed prior to testing.
- C. Test Repeating:** Repeat applicable tests at specified intervals, whenever the source of supply is changed, or whenever the characteristics of the materials change or vary.
- 1.05 **TEST COSTS:** Owner will pay for testing performed by Testing Laboratory except Contractor shall reimburse the Owner for retesting costs caused by failure of materials to pass initial tests unless such failure was due to conditions or natural causes beyond the Contractor's control.
- 1.06 **TEST REPORTS:** Testing Laboratory will furnish one electronic copy of each test result report, signed and certified by the Testing Laboratory supervising engineer, to each of the following:
- 
- Owner  
Architect  
Applicable Engineer of Record  
Contractor  
Governing Authority
- 1.07 **INSPECTIONS, CONTINUOUS AND SPECIAL:**
- A. Inspections,** continuous and special, shall be performed by Inspectors as required by the Contract Documents and Building Code. During course of Work under inspection, each such Inspector shall submit detailed reports relative to progress and condition of Work including variances from the Contract Documents, and stipulating dates, hours, and locations of the inspections.
- B. Inspection Costs:** Owner will employ Inspector and pay for required continuous and special inspections, including structural inspections required by building codes and governing authority.
- C. Reimbursement of Inspection Costs:** The Contractor shall reimburse to the Owner all or any part, as the Owner may deem just and proper, of the actual excessive inspection costs incurred by the Owner due to any or all of the following unless said causes are due to conditions or natural occurrence beyond Contractor's or sub-contractor's control:
1. Contractor's failure to complete the Work within the Contract Time stated in the Agreement, and any previously authorized extensions thereof.
  2. Claims between separate contractors.

3. Covering of any of the Work before the required inspections or tests are performed.
4. Extra inspections required for Contractor's correction of defective Work.
5. Overtime costs for acceleration of Work done for Contractor's convenience.

**D. Approvals Required by Others:** If the laws, ordinances, rules, regulations, or orders of any Governing Authority require any of the Work to be specifically inspected, tested, or approved by some authority other than the Owner, Owner's Inspector, Testing Agency, or Contractor, the Contractor shall give all required notices and make all arrangements, shall deliver to the Owner the certificates of inspection, testing, or approval of such public agency.

1.08 **CONTRACTOR-FURNISHED ASSISTANCE:** Whenever requested, Contractor shall furnish access, facilities, and labor assistance as necessary for duties to be performed at the site by Testing Laboratory and Inspector including furnishing ladders, hoisting, temporary lighting and water supply, and like services. If special requirements are requested of Contractor, Contractor shall be compensated for said special requirements with Owner's prior written approval.

1.09 **SITE ACCESS**

- A. Owner and Architect shall** have access to the site at all times, to all parts of the work and to all shops/warehouses where materials or work is in preparation, fabrication or storage.
- B. Owner shall have the right** to reject materials and workmanship deemed defective Work, and to require their correction. Rejected work and materials shall be corrected in a satisfactory manner with no additional cost or time to contract. If contractor does not correct rejected work with a reasonable time, fixed by written notice in accordance with the terms and conditions of the Contract Documents, Owner may correct rejected work and recover costs including but not limited to design, engineering, repair, replacement and administrative costs through deductive change order.
- C. The Owner at any time** prior to Final Completion reserves the right to make an examination of work already completed by removing work in place. The contractor shall, on request, promptly furnish all necessary facilities, labor and materials. If work is found to be defective in any request due to the fault of the contractor all expenses of such examinations and of satisfactory reconstruction will be at the contractor's expense. If work is found to meet the requirements of Contract Documents, the additional cost of examination and replacement shall be paid for by Owner.

- D. Should Owner determine** that it is not feasible, or in Owner’s interest, to require non-conforming work to be repaired or replaced, an equitable reduction in Contract Sum shall be made by agreement between Owner and contractor.
  - E. Acceptance of non-conforming** work, without specific written acknowledgement and approval of the Owner and, as applicable, Governing Authorities, shall not relieve the contractor of the obligation to correct such work. Once discovered, contractor shall correct and modify work to bring it into compliance with Contract Documents at no additional cost or time to Contract.
- 1.10 VERIFICATION OF CONDITIONS: Prior to installation of any portion of the Work, the Contractor shall inspect the Work in place to receive the Work to be installed and arrange for correction of defects in the existing workmanship, material, or conditions that may adversely affect Work to be installed. Such inspections shall include test applications of the materials to be installed as required to establish the correct condition of surfaces involved. Installation of materials on Work in place constitutes acceptance by the Contractor of such Work in place as being in proper condition to receive the materials to be applied and waiver of claim that the Work in place is defective as pertains to warranty requirements, excluding unascertainable or concealed conditions. Where the Specifications require a material to be installed under the supervision or inspection of the material manufacturer or his representative, manufacturer or his representative also shall inspect the substrate Work in place and issue a letter of review to Architect.
- 1.11 QUALITY ASSURANCE
- A. Bring together the various** parts, components, systems and assemblies as required for the correct interfacing and integration of all elements of work. Contractor shall coordinate work to correctly and accurately connect abutting, adjoining, overlapping and related elements, including coordinating with work under separate contracts by Owner, utility agencies and companies.
  - B. Provide one on-site person** who shall be both knowledgeable and responsible for all work to be performed on this project at all times during normal work hours. Contractor’s appointed representative shall be responsible for all directions given to him and said directions shall be binding as if given to the contractor. Do not change contractor’s appointed representative without prior approval of Owner.
  - C. Provide firms and individuals** trained and experienced in manufacturing, fabricating, supplying, installing, erecting and assembling work required by the Contract Documents, whose work has resulted in a record of successful in-service performance. Provide direct on site supervision of all workers by supervisors trained and experienced in the type of work being performed. Provide workers performing the actual work that are trained and experienced in the type of work they are being asked to execute, capable of understanding the Contract Documents and implementing their requirements.

- D. Provide installers and workers** practicing the best methods known to each particular trade. Use adequate numbers of skilled, experienced workers who are adequately trained and completely familiar with the requirements and methods needed for completion of the work. Provide adequate number of supervisors and foreman for each piece of work. Foreman and supervisors shall be skilled and experienced in the particular work they are managing.
- E. Be current and** knowledgeable of all applicable codes and regulations affecting the work.
- F. Provide the services** of professional engineers as necessary who are legally qualified to practice in jurisdiction where project is located and who are experienced in providing engineering services of the kind required.
- G. Certain portions of the** documents or manufacturer requirements require execution of the work by manufacturer certified installers. Certified installers shall provide supervisors and workers thoroughly trained in the handling and installation of products specified in full compliance with manufactures written installation and warranty requirements.
- H. When required by either** Contract Documents or manufacturer’s requirements, provide an authorized representative of manufacturer who is trained and approved by manufacturer to inspect and verify that substrate conditions and installation satisfies manufacturer’s written installation and warranty requirements. If required by manufacturer, provide compensation to manufacturer for costs and expenses of site visits and observations at no additional cost or time to Contract.
- I. Contract Documents may** require that certain construction activities be performed by specialists who are recognized experts in the operations to be performed. Engage specialists as required at no additional cost or time to Contract.
- J. Monitor and coordinate suppliers,** manufacturers, fabricators, products, services, site conditions and workmanship, to produce work of specified quality.
- K. Secure products in place** with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion and disfigurement.
- L. Furnish without extra** charge any material and labor required in order to comply with Governing Authorities, applicable codes and regulations and referenced standards.
- M. Require all subcontractors,** trades, crafts and suppliers to coordinate their portion of work with the contractor’s field superintendent and work of other subcontracts, to prevent scheduling, sequencing, dimensional and other conflicts and omissions.

- N. **Coordinate and schedule** work with work being performed for project under separate contracts. Contractor shall make direct contact with parties responsible for work under separate contracts, in order to provide timely notifications and to facilitate information exchanges.

#### 1.12 CONFLICTING REQUIREMENTS

- A. **If compliance with** standards or code requirements is specified and the standards or code requirements establish different or conflicting requirements for minimum quantities or quality levels, include and comply with the most expensive requirement at no additional cost or time to Contract.
- B. **The quantity or quality** level shown or specified may be the minimum required to comply with the contract documents and jurisdictional authorities. The actual installation may exceed the minimum. Indicated numeric values are minimum or maximum, as appropriate, for the context of requirements.
- C. **If contractor should have** been reasonably aware of, or knows of conflicts within the Contract Documents provide more expensive option at no additional cost or time to Contract.
- D. **If contractor should have** been reasonably aware of, or knows of conflicts between code requirements, Governing Authorities and contract documents provide more expensive option at no additional cost or time to Contract.
- E. **Where the Contract Documents** require or describe products or execution of better quality, higher standard or greater size than required by Governing Authorities and standards, provide better quality, higher standard or greater size required by Contract Documents at no added cost or time to contract so long as such increase is legal.
- F. **Where no requirements** are identified in the Drawings or Specifications, comply with all requirements of applicable codes, ordinances and standards of Governing Authorities.
- G. **Where laws, ordinances,** rules and regulations require more care, greater time to accomplish work or require better quality, higher standards or greater size and quantity of products, work shall be accomplished in conformance to such requirements with no change to the Contract Time and Contract Sum.
- H. **Unless more stringent** requirements are indicated or specified, comply with manufacturer's written installation and warranty requirements, reference standards and building code requirements in completing the work.

- I. In determining** “most expensive requirement” and “options” in items “A” through “H” above, consider all factors, such as but not limited to, material cost, order processing, submittal time, delivery time, fabrication labor and time, labor and installation, taxes and affects on overhead, general conditions and project schedule.

**PART 2 - PRODUCTS** (Not Applicable)

**PART 3 - EXECUTION**

3.01 TESTS AND INSPECTIONS: Owner will pay for the following testing and inspections as required by City, Governing Agencies or as requested by Owner except as stated otherwise for specific items.

- A. Site Work:** Tests and inspections performed by Geotechnical Engineer of record for the Foundation Investigation Report.
1. Foundations, excavation (cut), compaction, and fill and backfill inspection and testing.
  2. Shoring of cut banks and slope at cuts, except as otherwise specified under Division 2.
  3. Approval of site and imported earthwork materials.
  4. Unauthorized overexcavation or retesting.
  5. Verification of shoring stability and monitoring.
  6. Certification of pads by Owner's Civil Engineer of Record.
- B. Reinforcing Steel:**
1. Conformance testing of bars.
  2. Inspector for welding of bars.
  3. Inspect final placement of bars.
- C. Cast-In-Place Concrete and Low Density Concrete:**
1. Mix design of concrete.
  2. Conformance testing of materials.
  3. Casting and testing of cylinders.
  4. Inspector during placing of concrete.
- D. Structural Steel:**
1. Conformance testing of materials.
  2. Inspector for groove welding and field welding, if required.
  3. Inspector for shop fabrication of structural steel unless shop is approved by the Building Department.
  4. Inspector to verify grouting under column base plates.

**E. Masonry:**

1. Conformance testing of materials - costs paid by Contractor.
2. Testing of mortar and grout.
3. Continuous inspection required by Drawings or Specifications.

**F. Post-Tensioning of Concrete:**

1. Conformance testing of tendons - costs paid by Contractor.
2. Verification of calibration of gages - costs paid by Contractor.
3. Inspector during placement of tendons.
4. Inspector during stressing operations.

**G. Acoustical Wall and Floor Systems:**

1. Conformance testing of materials.
2. Acoustic test reports certifying wall and or floor systems is installed in conformance with certified test reports.

**H. Wood:**

1. Materials:
  - a) Sawn Lumber and Wood Structural Panels.
  - b) Glued Laminated Members.
2. Wood Inspection:
  - a) Wood Construction.
  - b) Glued Laminated Construction.
  - c) Timber Connectors.

**I. See Contract Documents for Additional Tests and Inspections.**

- 3.02 Maintain a testing and inspection log at project site. Post changes and modifications as they occur. Provide access to log by Owner.
- 3.03 On completion of testing, inspecting, sample taking and similar services, repair damaged construction and restore substrates and finishes. Comply with requirements of Section 01 73 00 Cutting and Patching.
- 3.06 Electronic files of selected plan and evaluation backgrounds only from the Contract Documents are available from the Architect. Files are sent on an “as is” basis and no warranty is expressed nor implied as to accuracy or conformance or correctness with the Contract Documents. The Architect and its Consultants shall be held harmless for any damages arising from use by others. Architect and its consultants reserve right to update,

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change and modify files after transmission without notice. Prior to transmission receiver shall sign appropriate waiver form available from Architect.

END OF SECTION

**SECTION 01 45 80**

**MOCK-UPS**

**PART 1 – GENERAL**

1.01 Drawings and general provisions of the Contract, including other Division 01 Specification Sections and other technical Specification Sections apply to this Section.

**A. Section Includes:** Mock-ups are structures that represent components of a portion of the building as indicated.

1. Prior to installation of actual work provide specified mock-ups identical in every respect to the finished work specified.
2. In accordance with the provisions of this Manual, provide engineering design required to ensure the structural stability of the mock-ups.
3. Mock-ups will be reviewed for approval and acceptance by Governing Authorities and for acceptance by the Owner. When so accepted, the mock-ups will become the standard by which subsequent work will be evaluated.

1.02 MATERIAL DATA

**A. Schedule:** Include mock-up preparation and review dates and times in Project Schedule.

1.03 QUALITY ASSURANCE

**A. Qualifications:** Use workers who will execute the actual work on the project.

1. Contract Documents may require execution of the work by manufacturer certified installers. Provide the same certified installers for construction of mock-ups that will be used to complete the actual work.
2. Contract Documents may require that certain construction activities be performed by specialists who are recognized experts in the operations to be performed. Provide the same specialists to construct mock-ups that will be used to complete the actual work.
3. Provide the services of professional engineers, as necessary to design mock-ups, who are legally qualified to practice in jurisdiction where project is located and who are experienced in providing engineering services of the kind required.
4. Coordinate between trades and provide all work necessary to construct mock-ups.
5. Employ and assign knowledgeable and skilled personnel as necessary to perform quality control to ensure that the mock-up is provided as required.

- B. Field Representation:** When required by Contract Documents or Manufacturer Warranty, a representative of the manufacturer shall be present on site to observe construction of mock-up. Comply with manufacturer’s warranty and installation requirements.
- C. Mock-ups:** Before installing portions of the Work requiring mock-ups, build mock-ups for each form of construction and finish required. Comply with the following, use materials indicated for the completed Work:
1. Build mock-ups of size indicated, or, if not indicated, as acceptable to Owner.
  2. Notify Owner and Architect minimum of seven days in advance of dates and times when mock-ups must be reviewed.
  3. Coordinate timing of mock-ups so construction, review, modification, and acceptance of mock-up will not impact construction schedule. Make sure mock-ups are completed, tested if necessary and accepted in time for ordering and delivery of long lead items. Be sure to include review time by all necessary parties including manufacturer, Testing Laboratory and Governing Agency representatives.
  4. Revise mock-ups as necessary to obtain owners approval. Adjust construction progress as necessary to accommodate reworking of mock-ups and avoid delay in the work.
- D. Visual Quality Mock-Ups:**
1. Mock-ups shall demonstrate the full proposed range of aesthetic effects and workmanship. Visual examination of the mock-ups will be made by interested parties during construction of mock-ups and after completion of mock-ups.
    - a) Provide close up, within reach access to mock-ups as well as access to all sides of mock-up for observation, evaluation, inspection and testing.
    - b) Incorporate changes or variations as directed by Owner into mock-ups.
    - c) Obtain Owners approval of mock-ups before commencing the corresponding work for the Project.
  2. Contractor assumes all risk resulting from work completed without mock-up review. Review, comment, or no comment and acceptance of mock-up, does not relieve Contractor from fulfilling requirements of Contract Documents. Deviations from Contract requirements in completed work, whether noted or not noted in mock-up, are Contractor’s responsibility and must be corrected at no additional cost or time to Contract.
  3. Construct mock-ups in a layered fashion so all elements of the assembly can be seen. For assemblies requiring testing construct additional mock-up, fully assembled for testing purposes.

4. Maintain mock-ups during construction in an undisturbed condition as a standard for judging the completed Work. Do not alter, remove or destroy mock-ups.

**E. Performance Mock-Ups:** Construct performance mock-ups in compliance with requirements specified in applicable Section of the Specifications and requirements of authority having jurisdiction.

1. Performance mock-ups will be reviewed by Governing Authority, when required by that authority, and Testing Laboratory. Approval of the Governing Authority and Testing Laboratory shall be secured prior to start of fabrication and field installation of actual work.
2. Submit reports of testing of performance mock-ups to Owner and Governing Authority.

## **PART 2 – PRODUCTS**

2.01 MATERIALS AND COMPONENTS: Materials and finishes shall comply with the requirements specified in the various applicable Sections of the Specifications, and shall match previously reviewed samples. Mock-ups shall incorporate all related construction materials and finishes having a visual or technical effect upon the completed work.

- A. If materials or systems** used in previously accepted mock-ups are changed through no fault of Owner or Architect, seek approval of such materials through the substitution process, and create a new mock-up with the alternate materials and obtain acceptance at no additional cost or time to Contract. Refer to Section 01 60 00 for substitution requirements.
- B. Construct mock-ups** using materials and methods identical in all respects to the materials and methods to be used in the actual work.
- C. Provide all necessary materials**, so mock-up reflects actual construction and conditions proposed in finished work in all respects, including but not limited to, supporting structure, substrates, flashing, attachment, backings, opening and finished materials.
- D. Size:** Provide full size mock-ups of construction in accordance with details on Contract Drawings.

## **PART 3 – EXECUTION**

3.01 INSTALLATION: Use identical methods and products to those proposed for permanent Work. Construct mock-ups in safe and structurally sound manner, to accommodate all loads imposed by environmental factors and examination activities. Construct mock-ups in compliance with reviewed submittals. Construct mock-ups using same construction personnel, means and methods as intended for permanent Work. Completed appearance

of mock-ups shall match that of permanent Work. Demonstrate the full range of aesthetic effects for materials with variances.

- 3.02 MAINTENANCE: Maintain and protect mock-ups during course of construction until Substantial Completion. Maintain mock-ups and surrounding site in a safe and clean condition, protected from soiling, damage and deterioration. Immediately restore damaged mock-ups.
- 3.03 REMOVAL: Remove temporary mock-ups at the completion of the work in a manner that shows no evidence of mock-ups previous existence. Complete work at area of temporary mock-up in accordance with Contract Drawings. Accepted mock-ups may become part of the completed work if undisturbed at time of Substantial Completion. Record location of permanent mock-ups in Record Drawings.

END OF SECTION

**SECTION 01 50 00****CONSTRUCTION FACILITIES AND TEMPORARY  
CONTROLS JOBSITE SIGNS****PART 1 - GENERAL**

- 1.01 Drawings and general provisions of the Contract, including other Division 01 Specification Sections and other technical Specification Sections apply to this Section.
- 1.02 GENERAL: On a regular basis the Contractor shall keep areas orderly, free of hazards, and leave in clean safe condition acceptable to Owner and Governing Authorities.
- 1.03 Contractor is responsible for providing all materials and methods necessary for temporary facilities, controls and protection to complete the work and comply with requirements of Governing Authority.
- 1.04 Contractor is responsible for site, building and individual room security and for security to all related areas of work. In the event of loss or damage, promptly restore the work, temporary construction facilities and controls by repair or replacement at no charge in the Contract Sum or Contract Time. At contractor's discretion, employ guards to protect the site after working hours at no cost or time to contract.
- 1.05 Provide all necessary engineering and design for temporary shoring and bracing to support elements as the work proceeds. Submit design and process as necessary to obtain approvals from Governing Agencies.
- 1.06 Provide protection, operate temporary facilities and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway and subsoil contamination or pollution, or other undesirable effects. Restrict use of noise making tools and equipment to hours required by Governing Authorities.
- 1.07 Install Architects Identification Sign in a location agreed to by Architect. Sign will be supplied by Architect. Install sign to resist affects of wind.

**PART 2 AND 3 - PRODUCTS AND EXECUTION**

- 2.01 TEMPORARY BARRICADES: Provide solid or chain link fencing type barricades. Construct and relocate or alter as required by Progress of the Work, Code, or Governing Authorities having jurisdiction. Paint solid barricades exposed to public view with 2 coats of paint in colors designated by Owner. Install fabric screen to chain link cut wind pressure relief slots in screen.
- 2.02 TEMPORARY STORAGE FACILITIES: Provide temporary storage facilities necessary to protect materials and equipment delivered to site from damage and theft. Maintain sheds in a clean and sightly condition. Distribute all materials stored in permanent

structures to prevent overloading of floors or structure. If on-site storage area is inadequate, arrange and pay for necessary off-site facilities at no additional cost or time to Contract.

- 2.03 **OFFICES AND TELEPHONES:** Provide onsite office with heating, cooling and ventilation with an adequate table, plan rack, desk, chairs, telephone, scanner, computer and printer with internet and e-mail access for business use without charge. The office, equipment, and furniture shall remain the property of the Contractor. Provide access to office facilities by Inspector. Provide sufficient meeting space with table and chairs for 10 people. Provide office with bathroom, toilet and sink.
- 2.04 **TOILET FACILITIES:** Install temporary toilets, hand and eyewash stations for workmen and maintain facilities in a clean and sanitary condition. Locate and connect to existing sewers when feasible. Chemical toilets may be used if approved by Governing Authority. Schedule regular maintenance and cleaning not on day of Owners Progress Meeting. Locate chemical toilets away from and downwind of field office.
- 2.05 **UTILITY SERVICES:** Send proper notices, make necessary arrangements, provide services required in care and maintenance of public utilities, and assume the responsibility concerning same for which Owner may be liable, except existing utilities where no work by the Contractor is being preformed. Do all necessary enclosing or boxing in for protection of public utilities. Upon completion of the Work, remove connections, temporary service lines, enclosures, fill in openings in concrete or masonry with like materials, grout watertight, repair paving, backfill as necessary and leave in finished condition.
- A. Water:** Furnish and pay for all water required for the Work, with the necessary temporary piping or hose from source to points on the site where used. Furnish potable water from domestic source.
- B. Light and Power:** Furnish and pay for electric service required for the Work and provide temporary poles and overhead construction, transformers, meters, drops, wiring, panels, circuit and ground fault protection and fittings for both light and power. Pay charges and fees for making the temporary service connections.
- C. Gas:** Furnish and pay for fuel gas required for the Work. Make the necessary arrangements and pay charges required by the serving utility company. Furnish temporary distribution piping as required.
- D. Arrange for Governing Authorities** and Utility providers to test and inspect each temporary utility before use. Obtain required certifications approvals and permits.
- E. Use of building services** and utilities, are imperative for occupancy and operations of facilities by Owner, at time of Substantial Completion, even if work under the Contract is not completed. If permanent utility services are not

complete one week prior to Substantial Completion contractor shall obtain, monitor, maintain and pay for temporary services for Owner's uses, including permits, operation and removal, at no additional cost or time to Contract.

2.06 **TEMPORARY HEAT AND COOLING:** Furnish and pay for heating and cooling, fuel and services to protect the Work against injury from dampness and cold, overheating or excessive humidity or dryness until final acceptance. Building heating and cooling system may be used for temporary heating and cooling. Furnish a competent engineer to operate system and be solely responsible for damage to the heating and cooling equipment during such temporary operation. Provide heating, cooling and ventilation as necessary to maintain correct temperatures and air exchanges within building during finishing operations, with provision to vent obnoxious, flammable, or hazardous fumes to the exterior.

- A. **Drywall:** Maintain building temperature and humidity for proper installation in accordance with the Drywall/Plastering Bureau (323) 660-4644 during application, drying of tape and finishing so moisture will not occur. Maintain adequate ventilation for drying of tape and finish.
- B. **Finishes:** Maintain building temperature and humidity for proper installation of finish lumber and millwork are delivered, and throughout placing of finish and other finishing operations such as painting and installation of resilient coverings.
- C. **Filters:** During temporary heating, cooling and ventilation equip system(s), with temporary throwaway type filters to prevent dust from entering air supply and return system. Be responsible for delivering system free of dust and lint at time of final acceptance. Replace filter with permanent filter at time of Substantial Completion.

2.07 **USE OF FACILITIES:**

- A. **Use of Owner's elevators** will be permitted, as long as elevators are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore elevators to condition existing before initial use, including replacing worn cables, guide shoes and similar items of limited life. Provide operational adjustment and timing to elevators prior to Substantial Completion. If, despite protection, elevators become damaged, engage elevator installer to restore damaged work so no evidence remains of damage or correction work, at no additional cost or time to contract.
- B. **Until permanent stairs** are available, provide temporary stairs including railings.
- C. **Use of Owner's stairs** and permanent stairs will be permitted, as long as stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial

Completion, restore stairs to condition existing before initial use. If, despite protection, stairs become damaged, restore damaged areas so no evidence remains of damage or correction work, at no additional cost or time to contract.

- D. Use of Owner's roof access** ladder and permanent ladder will be permitted, as long as roof access ladder is cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore roof access ladder to condition existing before initial use. If, despite protection, roof access ladder becomes damaged, restore damaged area so no evidence remains of damage or correction work, at no additional cost or time to contract.
- 2.08 **TEMPORARY AND PUBLIC ROADS:** Provide temporary roads to all buildings to withstand adverse weather conditions and as required by Governing Authorities to allow access by emergency vehicles. Provide street sweeping and clean-up to keep adjacent public ways, streets and sidewalks clean. Clean-up all trash, waste, material and soil debris trails on public ways and streets as a result of the work. Trucks hauling soil, gravel and other loose material must be wetted and covered.
- 2.09 **REMOVAL OF TEMPORARY CONSTRUCTION:** Remove all temporary facilities and other construction of temporary nature from site as soon as progress of the Work will permit but no later than date of Substantial Completion. Contractor may move his facilities into completed portions of the building if agreed to by Owner. Before Substantial Completion of the Work, recondition and restore portions of site and building impacted by temporary facilities to new condition.
- 2.10 Provide all temporary shoring and bracing as necessary to support elements of the work as the work progresses.
- 2.11 Provide portable, hand-carried, UL rated fire extinguishers; with class and extinguishing agent and in quantity and location as required by Governing Authority. In addition to any Governing Authority requirements, provide and maintain fire extinguishers in wood construction in all construction areas, storage areas and enclosures, temporary offices and similar spaces and immediately available to all workers using flame to conduct work.
- 2.12 Comply with traffic control requirements of Governing Authorities.
- A. Protect existing site** improvements to remain including curbs, pavement and utilities.
- B. Maintain access for** fire-fighting equipment and access to fire hydrants.
- 2.13 Provide temporary parking areas for construction personnel. Do not park on public roadways unless approved by Governing Authorities.
- 2.14 Comply with requirements for dewatering and drainage by Governing Authorities. Maintain project site, excavations and construction free of excess water.

- 2.15 Comply with Owner's requirements for using and protecting walkways, loading docks, building entries and other existing building facilities during selective demolition operations.
- 2.16 Install temporary fencing located outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding and erosion.
- 2.17 Comply with requirements of Governing Authorities for erecting structurally adequate pedestrian barricades, including warning signs and lighting. Provide structurally adequate, protective, covered walkway for passage of individuals where operations may occur overhead.
- 2.18 Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, and construction operations and activities.
- 2.19 Provide floor-to-ceiling temporary dustproof partitions to limit dust and dirt migration and to separate in-use occupied areas from fumes and noise.
- A. Construct dustproof partitions** with gypsum wallboard with joints taped on public side, over 20 gage metal studs 16" on center with fire-retardant plywood on construction operations side. Provide finish and paint on public side as required by Building Owner.
- B. Insulate partitions** to provide noise protection.
- C. Seal joints** and perimeter.
- 2.20 Provide and maintain temporary fire protection facilities of types needed to protect against reasonably predictable fire losses until permanent fire-protection needs are supplied by approved operating facilities. Comply with California Fire Code and Governing Authorities during all phases of the work.
- 2.21 Clean project site and work areas regularly, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

END OF SECTION

**SECTION 01 60 00**

**MATERIAL AND EQUIPMENT**

**PART 1 - GENERAL**

- 1.01 Drawings and general provisions of the Contract, including other Division 01 Specification Sections and other technical Specification Sections apply to this Section.
- 1.02 **PROPOSED SUBSTITUTIONS:** Submit proposed substitutions with necessary justification information to the Owner for acceptance. Owner may require the submission of Drawings, Product Data, Samples, and other information for consideration of proposed substitutions. Include cost difference and schedule availability of products in substitution submittal.
- A. Substitutions:** Are products, materials, equipment, designs and methods of construction that require a deviation from the basis of design requirements of the Contract Documents.
1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty items.
  2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.
  3. The following are not considered requests for substitutions:
    - a) Substitutions requested during bidding period and accepted by Addendum prior to award of Contract, are included in Contract Documents and are not subject to requirements specified in this Section.
    - b) Revisions to Contract Documents requested by Owner or Architect.
    - c) Specified options of products and construction methods included in Contract Documents.
    - d) Contractor's determination of compliance with governing regulations and orders issued by Governing Authorities.
- B. Specific manufacturer or product names** noted as "or equal" "equal to" or similar language are referenced to establish minimum basis of design requirements for quality, properties, function, dimension, operating and performance weight, performance, physical properties, appearance, maintenance, wear, warranty, material composition, finishes, color and other characteristics for the purposes of evaluating comparable products by other manufacturer's. When followed by the words "or equal", "equal to", "or approved equal" or similar language, listed manufacturers are provided as a suggested guide and are not intended to limit contractor's choices of manufacturers or products. Contractor is

responsible for providing products that meet the basis of design in every respect and for providing all required information necessary to demonstrate compliance. When products and manufacturer are not followed by the words “equal”, “equal to”, “or equal”, “or approved equal” or similar language, provide specified product.

- C. Descriptive, performance and reference** standard requirements in the Specifications establish “salient characteristics” of products. Where Specifications require compliance with performance requirements, provide products that comply with or exceed requirements.
- D. Where products are required** to match existing in place products, products provided must match existing products in every respect including but not limited to, color, pattern, texture, finish, sheen, size, thickness, weight and attachment method and performance.
- E. Contractor is encouraged to** provide substitution requests prior to submitting or providing bids or pricing. Substitution requests submitted after the date of the Owner Contractor agreement will be reviewed at the discretion of the Owner.
- F. Substitutions are not** a submittal. Do not submit substitutions in a submittal format or with a submittal number. Substitutions will not be considered if they are indicated or implied on shop drawings, product data or sample submittals.
- G. Provide completed substitution** request form showing substitution request information number, with a summary and list of each item of content. Contractor shall indicate on form that contractor has reviewed contents of substitution request and has found it to be in compliance in all respects, and is equivalent to or superior with the requirements of the Contract Documents, including material and installation requirements. Contractor shall sign form stating that the substitution is suited for and can perform the purpose or application of the specified product indicated or specified in the Contract Documents.
- H. Allow for Substitution** Review in project schedule.
- I. Provide the following to substantiate the substitution:**
  - 1. Statement indicating why specified product or method cannot be provided.
  - 2. Detailed description, in written or graphic form as appropriate, including all changes or modifications needed to other elements of the work and to construction to be performed by the Owner and by others under separate contracts with Owner that will be necessary if the proposed substitution is accepted.
  - 3. Detailed side-by-side comparison of significant qualities of proposed substitution with those of the work specified. Mark clearly affected Specifications section for any differences from item specified. Significant

qualities may include attributes such as performance, weight, size, durability, visual effect and specific features and requirements indicated. Indicate deviations from work specified.

4. Complete product data, including drawings, descriptions of products, fabrication and installation procedures and samples, as necessary to justify substitution requests.
5. Research/evaluation reports acceptable to authority handling jurisdiction, certificates and qualification data evidencing compliance with Governing Authority requirements in effect for project.
6. Substitutions on the basis of unavailability of a product must be accompanied by letter on manufacturer's letterhead stating lack of availability, and that contractor could not have know of unavailability at the time of bid.
7. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
8. Provide statement of changes or modifications to other work to allow/accommodate substitution. Modify or adjust affected work as necessary to integrate work of the approved substitutions.

**J. Review/Acceptance or Rejection** of proposed substitutions is at Owner's discretion, whose judgement will be final and will include consideration of the following factors among others in comparing equality of proposed substitutions with indicated or specified requirements:

1. Quality of materials, structural strength, and details of construction or fabrication.
2. Performance and function, mechanically and technically.
3. Appearance and finish, or characteristics permitting required finish to be applied.
4. If proposed substitutions require altering the arrangement of adjoining or related Work, resulting arrangement must be equal in convenience and practicality to original arrangement.
5. Products equal in quality and utility are generally competitive products and are generally equal in price. If approval is requested for materials or equipment more economical than the specified products, Owner may require the specified products.
6. An inequality in availability of replacement parts or maintenance services may be a determining factor.
7. Code approvals and service history.
8. Substitution must clearly be in Owner's best interest because of quality, cost, performance or conformity to code requirements.
9. Requested substitution is consistent with the Contract Documents and will produce indicated results.
10. Requested substitution will not adversely affect contractor's construction schedule.

11. Requested substitution has received necessary approvals of authorities having jurisdiction.
12. Requested substitution has been coordinated by contractor and is compatible with other portions of the work.
13. Requested substitution provides specified warranties.
14. Substitution shall, without exception, be manufactured of same basis materials and comply with or exceed all Specification requirements of dimension, non-operating weight, operating weight, function, structure and appearance.
15. Substitutions shall be judged on the basis of their suitability in relation to overall design of the Project, as well as for intrinsic merits.
16. Architect will not approve as equal to materials, specified proposed substitutes which, in Architect's opinion, would be out of character, obtrusive or otherwise inconsistent with character or quality of design of Project.
17. In order to permit coordinated design of color and finishes, Contractor shall, if required by Architect, furnish substituted material in color, finish, texture or pattern specified for original material, at no additional cost to the Owner.
18. Substitution request is fully documented and properly submitted.
19. If requested substitution involves schedule impact Contractor has identified time impact and a mitigation plan.
20. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

**K. Resubmittal of Proposed Substitutions:** Do not resubmit proposed substitutions that are rejected in modified form. Upon rejection of a proposed substitution, Bidder/Contractor may submit another proposed substitution within a reasonable time limit as agreed to by the Owner. If the second proposed substitution is rejected or not received by the Owner within the specified time, provide only the indicated and specified Work at no additional cost or time to Contract.

**L. Compliance:** Use of Accepted Substitutions does not relieve Contractor from compliance with the Contract Documents. Contractor shall bear all extra expense resulting from accepted substitutions where substitutions affect adjoining or related Work, unless specified otherwise in Contract between Owner and Contractor. No increase in time or cost will be allowed for Architects evaluation or Contractors implementing substitutions. Investigate and document compatibility of proposed substitution with related products and materials. Engage qualified testing agency to perform compatibility tests as necessary and required.

- M. Unauthorized Substitutions:** If substitute materials are installed without prior acceptance from Owner, remove all the unauthorized materials and install those indicated or specified at no extra cost or time to Owner, unless Owner agrees to said substitution after the fact.
- N. Products that do not meet life safety requirements** will be rejected.
- O. If, in the opinion of the Architect,** the substitution request is incomplete or has insufficient data to enable a full and thorough review of the intended substitution, the Architect may ask contractor to provide additional information. Contractor is responsible for providing all necessary information including information requested by Architect to justify substitution.
- P. Denial of substitution requests** shall in no way justify additional time or cost to the Contract.
- Q. Failure by Owner or Architect** to respond does not constitute acceptance of proposed substitution and does not relieve contractor of requirements of Contract Documents.
- R. Contractor assumes all** costs associated with evaluation, installing and implementation of substitutions. Contractor is responsible for all professional fees, including Architect and Engineers, for time and services associated with evaluating substitutions and revising Construction Documents, and review, re-approval by Governing Authority. If necessary, fees will be paid for through deductive change order to Contract.
- S. Allow for all substitution request** and review times in construction schedule. Additional schedule time will not be granted for substitutions. Allow minimum of 20 working days for substitution review. Obtain approval of Governing Authorities for substitution.

## **PART 2 - PRODUCTS**

- 2.01 MATERIALS: Provide new materials and equipment unless otherwise indicated or specified.

  - A. Before placing orders,** advise Owner and/or Architect in writing of each named material, appliance, or piece of equipment proposed for the Work and its intended use unless already specified in the Contract between Owner and Contractor. Provide only one brand, kind, or make of material for each purpose throughout the Work notwithstanding that similar material or equipment of two or more manufacturers may be specified for the same purpose.

- B. Plurality of Terms:** For all materials or equipment referred to in the singular number, it is intended unless otherwise limited that such references apply to as much material or equipment as is required to complete the Work.
- C. Factory Finish Colors:** Color of material specified to be furnished with factory finish is subject to Owner's review and selection. Provide manufacturers colors for selection. If available color is not selected, provide another manufacturer's approved product which has an acceptable finish color, at no extra cost or time to Contract.
- D. If contractor is given option** of selecting between two or more products for use on project, product selected shall be compatible with products previously selected, even if previously selected products were also options.
- E. Provide all products required** for a compete and proper installation, even if not specifically indicated, at no additional cost or time to Contract.
- F. Where inter-related, multiple** components are required for a complete system provide components that are completely compatible and satisfy required warranties.
- G. Contractor is responsible for** providing products that are equal to or better than the level of quality and basis of design specified at no additional cost or time to contract.
- H. Consider all project requirements** when obtaining and supplying products, whether shown in the Contract Documents or not. Consider existing, surrounding, neighboring uses, occupancies and functions within 1,000 feet of the site before ordering products and materials. Make adjustments to order and provide complete installations compatible with neighboring uses at no additional cost or time to contract.
- I. Where Contract requires color,** texture or sheen selections to match specific samples or existing conditions, provide colors, textures and sheen to match samples or existing conditions specified, even if the use of custom colors, formulations or procedures are necessary to obtain a match to the satisfaction of Architect, at no additional cost or time to contract.

### **PART 3 - EXECUTION**

- 3.01 **TRANSPORTING AND HANDLING:** Transport and handle all materials and equipment by methods that prevent damage, defacing, or overstressing. Lift equipment, machinery and heavy fabricated products only at the lifting points designated by the manufacturer or, if not so designated, at the points or along the members designed to support the items when installed. Contractor shall bear all loss which may result from transporting and handling of materials and equipment, except those resulting from

Owner's vendors and shall provide approved replacements for damaged or defective items at no extra time or cost to Contract. Conform handling procedures to Title 8, CCR, as applicable.

### 3.02 INSTALLATION

- A. Clean areas where work** is in progress to the level of cleanliness necessary for proper execution of the work.
- B. Examine substrates, areas** and conditions with installer, manufacturer and supplier for compliance with requirements for installation. Record observations with photos, video and notations.
- C. Obtain and distribute templates** to parties involved for factory prepared and field installed work. Check shop drawings and coordinate with other work to confirm that adequate provisions are made for locating and installing fabricated products.
- D. Install products at the time** and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion. Prepare substrates and surfaces as recommended and required in writing by manufacturer. Perform work when existing and forecasted weather conditions are within limits recommended in writing by manufacturer. Comply with manufacturer's written temperature and humidity requirements. Allow materials to adjust to ambient conditions as recommended, by manufacturer in writing, prior to installation.
- E. Conduct construction operations** so no part of the work is subjected to damaging operations or loading.
- F. Do not use tools or** equipment that produce harmful noise levels to building occupants.
- G. After sub-contractors and** trades have completed portions of work, inspect work and adjacent areas and make any adjustments necessary.

3.03 STORAGE AND PROTECTION: Materials and equipment designed for permanent weather exposure may be stored off the ground without covering provided the equipment closures and seals are intact. Store all other materials and equipment off the ground and in dry, covered, weather-protected locations. Exercise special care to protect moisture-sensitive materials and other materials damaged by light (ultraviolet) or heat. Arrange adequate ventilation under protective covering to prevent condensation. The Contractor shall ensure that all installed materials, assemblies and equipment are continued to be protected from moisture, heat, sun, construction traffic until the time of Substantial Completion.

KTGY

SOBOBA HORSESHOE VILLAGE – PHASE 2

San Jacinto, California

MATERIAL AND EQUIPMENT

01 60 00 - 8

- 3.04 During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration.
- 3.05 Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

END OF SECTION



17911 Von Karman Avenue, Suite 200  
Irvine, CA 92614  
949.851.2133

## SUBSTITUTION REQUEST FORM

Project Name: Soboba Horseshoe Village – Phase 2

Substitution Request No.: ###

Project No.: 2025-0428

Contractor: (enter contractor name)

Project Address: (enter project address)

Date Submitted: (enter date)

Specification Title:

Section Number:

Page:

Article/Paragraph:

Original Specified Product:

### PROPOSED SUBSTITUTION:

Manufacturer:

Trade Name/Model Number:

Installer:

History:         New Product     2-5 years old     5-10 years old     More than 10 years old

### DIFFERENCES BETWEEN PROPOSED SUBSTITUTION AND SPECIFIED PRODUCT:

Point-by-point comparative data attached - **REQUIRED FOR ALL REQUESTS**

### REASON FOR NOT PROVIDING SPECIFIED ITEM:

### SIMILAR INSTALLATION:

Project:

Architect:

Address:

Owner:

Date Installed:

Proposed substitution affects other parts of the Work:     No     Yes; explanation attached

Response made during bidding/pricing phase - **NO COST EFFECT.**

Savings to Owner for accepting substitution:    (\$                    )

Proposed substitution changes Contract Time:     No     Yes;    Add/Deduct (            ) days.



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**CONTRACTOR'S (BIDDER'S) STATEMENT OF CONFORMANCE WITH THE CONTRACT DOCUMENTS:**

The contractor/bidder hereby certifies the following:

- I/we have investigated the proposed substitution.
- I/we believe that it is equal or superior to the specified product in all respects including function, appearance and quality.
- I/we will provide the same or similar warranty as specified and will provide all warranty documents to the client.
- I/we will provide same or similar servicing requirements as specified and will provide all operation and maintenance documents to the client.
- I/we have included complete cost data and implications of the proposed substitution.
- I/we will pay for changes to the building design and special inspection costs caused by the use of this product.
- I/we will be responsible for and will coordinate the compatibility and incorporation of the proposed substitution in the work, including all surrounding assemblies and materials.

Answer all questions and complete all blanks - use "N/A" if not applicable. Unresponsive or incomplete requests will be rejected.

---

SUBMITTED BY:

COMPANY:

SIGNED:

DATE:

---

**KTGY's Response:**

Accepted    Accepted with conditions (see attached)    Rejected    Processed ONLY

---

REVIEWED BY:

SIGNED:

DATE:

---

**A & E Consultant's Response:**

Accepted    Accepted with conditions (see attached)    Rejected

---

REVIEWED BY:

COMPANY:

SIGNED:

DATE:

---

**Owner's Response:**

Accepted    Accepted with conditions (see attached)    Rejected

---

REVIEWED BY:

COMPANY:

SIGNED:

DATE:

---

**SECTION 01 70 00**

**CONTRACT CLOSEOUT**

**PART 1 - GENERAL**

- 1.01 Drawings and general provisions of the Contract, including other Division 01 Specification Sections and other technical Specification Sections apply to this Section.
- 1.02 Hold a meeting at project site with Owner to review contract closeout procedures. Schedule meeting not earlier than 14 days prior to date anticipated for Substantial Completion review.
- 1.03 **SUBSTANTIAL COMPLETION:**
- A. Substantial Completion Defined:** The status of the Work, as reviewed by the Owner, when construction is sufficiently complete, in accordance with the Contract Documents, so Owner can occupy or utilize the Work for the use for which it is intended.
- B. Contractor to provide** punch list for Substantial Completion.

**PART 2 - PRODUCTS** (Not Applicable)

**PART 3 - EXECUTION**

- 3.01 **CLEAN UP AND DISPOSAL:** Requirements herein form a part of all other Sections of the Specifications and shall be coordinated with such additional clean up and disposal requirements as may be specified in other Sections.
- A. General:** Leave the entire Work vacuum clean.
1. **Control During The Work.** Take precautions to avoid spread of dust, dirt, debris, water, paint, cement, sprayed materials, and other substances about the site or to adjacent property. Clean up splatterings or spills of materials at time of occurrence. Remove dirt, debris, waste, and rubbish frequently, and do not allow to accumulate in the structure or on the site. Do not store flammable or toxic materials in the structure.
- B. Contractor's Supervision:** Inform all trades and workmen of the cleaning up requirements specified, and monitor where Work is in progress to ensure full compliance with all clean up requirements in this and other Sections.
- C. Owner's Observation:** Give the Owner at least 3 working days advance notice of readiness for observation to determine if work is substantially complete.

- D. Disposal:** Do not place rubbish or waste material in fills or backfills. Remove debris, rubbish, and waste material from Owner's property to a lawful disposal area and pay all hauling and dumping charges. Conform to pertaining Federal, State, and local laws, ordinances, rules, regulations, and orders.
- E. Final Clean Up - Exterior:** Clean surfaces of construction and site including fixtures, walls, soffits, floors, hardware, roofs, window and opening ledges and sills, horizontal projections, steps and platforms, walkways, rails and all like surfaces, and adjoining private and public property to the extent soiled by the Contractor's operations. Pressure wash building exterior prior to installation of window screens.
- F. Final Clean Up - Interior:** Leave surfaces in vacuum clean condition with all dust, dirt, stains, handmarks, paint spots, droppings, and other blemishes and defects completely removed, and conform to following requirements:
1. Hard Floors: Wash and dry concrete, tile, elastomeric, and similar floors, free of streaks or stains.
  2. Resilient Flooring: Freshly wax and buff as specified in Division 9, unless not recommended by manufacturer.
  3. Resilient Bases: Clean off adhesive smears and wipe clean.
  4. Carpet: Vacuum clean free of lint, soil, and dust.
  5. Bare and Painted Surfaces: Clean of dust, lint, streaks, or stains.
  6. Tile Walls: Clean and polish.
  7. Vinyl Wall Covering: Remove all adhesive on surfaces.
  8. Hardware and Metal Surfaces: Clean and polish all exposed surfaces using noncorrosive and nonabrasive materials.
  9. Glass: Wash and polish both sides, and leave free of dirt, spots, streaks, and labels. Clean and polish mirrors.
  10. Ceilings: Clean and free of stains, handmarks, and defacing.
  11. Fixtures and Equipment: Clean mechanical and electrical fixtures and like items. Leave lighting fixtures free of dust, dirt, stains, or waste material. Clean and service equipment and machinery, ready for use.
- G. Surfaces Not Mentioned:** Clean according to the intent of this Section and as required by material manufacturer.
- H. Contaminated Earth:** Final clean up operation includes removal and disposal of earth that is contaminated or unsuitable for support of plant life in planting areas, and filling of resulting excavations with suitable soil. Contaminated areas include those used for disposal of waste concrete, mortar, plaster, masonry, and similar materials, areas in which washing out of concrete and plaster mixers or washing of tools and like cleaning operations have been performed, and all areas that have been oiled, paved, or chemically treated. Do not dispose of waste oil, solvents, paints, solutions, or similar material of a penetrating nature by depositing or burying on Owner's property. Dispose contaminated soil legally.

- I. Conduct cleaning and waste-removal operations** to comply with local laws and ordinances and federal and local environmental and antipollution regulations. Turn over project in a “like new” condition.
- J. Employ experienced workers** or professional cleaners for final cleaning. Clean each surface or unit to condition expected in a first class building cleaning maintenance program. Comply with manufacturer’s written instructions. Complete cleaning operations before requesting inspection for certification of Substantial Completion for entire project.
- K. Engage an experienced, licensed exterminator** to make a final inspection and rid project of rodents, insects and other pests. Submit certifications that project is pest free at time of Substantial Completion.
- L. Comply with safety standards** for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner’s property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from project site and dispose of lawfully.
- M. Make final change** over to permanent locks. Turn over all keys to Owner.
- N. Turn over additional materials** and products as required by Contract Documents.
- O. On occupancy, the Owner** will assume responsibility for maintenance and custodial service for occupied portions of building.
- P. Maintain project in “Final Cleaning”** condition until final completion and turnover.

### 3.02 RECORD DRAWINGS:

- A. Record Set During The Work:** At site, maintain at least one set of Drawings and Specifications as a Field Record Set; apportion copies to the various Subcontractors for recording of their portions of the Work. Also maintain at least one copy of all Addenda, Bulletins/ASI’s, reviewed Submittals, Change Orders, correspondence, and transmittals at site. Keep Drawings and data in good order and readily available to Architect and/or Owner, and/or their representatives.
- B. Changes:** Clearly and correctly mark Field Record Set to show all changes made during the construction process at the time the changed Work is installed. No such changes shall be made in the Work unless authorized by a Modification or by specific approval of deviations or revisions in submittals. Provide bound copies of change order directives, RFI’s, ASI’s and Bulletins.

- C. Preparation of Final Record Drawings:** Contractor shall transfer all recorded changes in the Work indicated on the Field Record Set, Electronically. Changes for all trades shall be neatly and clearly marked and shown technically correct. Changes made during construction not documented by Architect’s Bulletins/ASI’s shall be recorded on an on-going basis by the Contractor and subcontractors, placed on the drawings and documented with clouds, deltas and a write-up and indicated in the drawing Title Block that they are “AS-BUILT” documents.
- D. Final Record Drawings:** Prior to Substantial Completion, Owner will order from Contractor, at Contractor's expense, one complete set of Field Record Set.
- E. Meeting:** Contractor and any of the Subcontractors involved shall attend post-construction meetings as reasonably needed to clarify the Field Record Set as may be required by Owner, at no extra time or cost to Owner.

3.03 Submit all completed required testing and inspection reports.

3.04 **MANUALS:** Obtain data from the various manufacturers and submit to Owner, Electronic (PDF) version, instruction, operation, and maintenance manuals to the extent required under other Sections of the Specifications.

- A. Contents:** Each manual shall have an index listing the contents. Information in the manuals shall include not less than (a) general, introductions and overall equipment description, purpose, functions, and simplified theory of operation, (b) specifications, (c) installation instructions, procedures, sequences, and precautions, including tolerances for level, horizontal, and vertical alignment, (d) grouting requirements including grout spaces and materials, (e) list showing lubricants for each item of mechanical equipment, approximate quantities needed per year, and recommended lubrication intervals; where possible, the types of lubricants shall be consolidated with equipment manufacturers' approval in order to minimize the number of different lubricants required for maintenance, (f) startup and beginning operation procedures, (g) operational procedures, (h) shut down procedures, (i) short and long term inactivation procedures, (j) repair, maintenance, and calibration instructions, (k) parts lists and all spare parts recommendations, (l) lists of all special tools, instruments, accessories, and special lifting and handling devices required for periodic maintenance, repair, adjustment, and calibration, and (m) other information as may be specified or required for approval.

1. List all Subcontractors and part of construction provided
2. List of all materials used that may need to be repaired or replaced.
3. List of all paint manufacturers, color numbers and location used.
4. List of sealants and manufacturers used and location.

- B. Format and Binding:** Include drawings and pictorials to illustrate the text as necessary to fully present the information. Where the information includes a

family of similar items, strike out the inapplicable information or identify applicable portions by heavily weighted arrows, boxes, or circles. Provide sturdy covers labeled to indicate the equipment to which it applies. Bind manuals less than one inch thick in standard three-ring binders; others shall have sturdy covers secured with removable fasteners and, when more than two inches thick, shall be bound in locking-bar post binders with rigid covers, or other suitable binding approved by Owner.

3.05 MAINTENANCE MATERIALS: Furnish and deliver all the special tools, instruments, accessories, spare parts, and maintenance materials and the special lifting and handling devices shown in the instruction manuals. Unless otherwise specified or directed, deliver the items to the Owner, with the Contractor's written transmittal accompanying each shipment, in the manufacturer's original containers labeled to describe the contents and the equipment for which it is furnished.

3.06 Provide all required executed warranties.

3.07 STARTING AND ADJUSTING:

- A. **Start and test all equipment** and operating components, to confirm proper operation. Test and adjust controls and safeties. Remove malfunctioning units, replace with new units and retest.
- B. **Comply with individual** sections and manufacturer's instructions for start-up and adjustment requirements.
- C. **Adjust equipment** for proper operation.
- D. **Provide qualified personnel** to instruct Owner to adjust, operate and maintain systems, subsystems and equipment not part of a system.
- E. **Provide instruction at mutually** agreed on times prior to Substantial Completion. Schedule training with Owner with at least seven (7) days advance notice.

END OF SECTION

**SECTION 01 73 00**

**CUTTING AND PATCHING**

**PART 1 - GENERAL**

1.01 Drawings and general provisions of the Contract, including other Division 01 Specification Sections and other technical Specification Sections apply to this Section.

1.02 SUBMITTALS

**A. Written Requests for Cutting and Alteration:**

1. Submit written request for information in advance of cutting or alteration which affects any of the following:
  - a) Structural integrity of any element of new or existing construction.
  - b) Integrity of weather-exposed or moisture-resistant elements.
  - c) Operation 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 under the Contract.
2. Include in requests for cutting and alteration:
  - a) Identification of Project.
  - b) Location and description of affected Work. Include shop drawings as necessary to identify locations and communicate descriptions of intended work.
  - c) Explanation of necessity for cutting and patching.
  - d) Description of proposed Work and products to be used.
  - e) Alternatives to cutting and patching.
  - f) Effect on existing construction.
3. Include written evidence that those performing work under separate contract have been notified and acknowledge that cutting and patching work will be occurring.
4. Indicate date and time cutting and patching Work will be performed.

**PART 2 – PRODUCTS**

2.01 PATCHING MATERIALS

**A. Patching Materials, General:** As required for original installation and to match surrounding construction.

1. Paving: At portland cement concrete paving, use concrete mix with maximum 3/8-inch aggregate and minimum 3000 psi 28-day compressive

strength. Provide dowels to existing paving and reinforce new paving with minimum No. 3 reinforcing steel bars at 16-inches on center each way. Welded wire fabric reinforcement will not be acceptable.

2. Lawns and grasses: Restore areas trenched, disturbed or damaged. Provide sod or seeded planting mix, to match existing lawn or grass area.
3. Building finish materials: Match existing products and finishes. Confirm colors, patterns and textures with Architect. Custom cut new materials to fit and to match joint patterns with existing materials.
4. Provide plants planting mix, mulch, soil as necessary to match existing landscaping areas.

- B. Product Substitution:** For each proposed change in materials, submit request for substitution under provisions of Section 01 60 00 - Product Requirements.

### **PART 3 - EXECUTION**

#### 3.01 EXAMINATION

- A. Examination, General:** Inspect existing conditions prior to commencing Work, including elements subject to damage or movement during cutting and patching.
- B. After uncovering existing Work,** inspect conditions affecting proper accomplishment of Work.
- C. Beginning of cutting or patching** shall be interpreted to mean that existing conditions were found, by Contractor, to be acceptable for cutting and patching operations.

#### 3.02 PREPARATION

- A. Temporary Supports:** Provide temporary supports to ensure structural integrity of the Work. Provide devices and methods to protect other portions of Project from damage.
- B. Weather Protection:** Provide temporary protection from elements for areas which may be exposed by uncovering Work. Maintain excavations free of water.
- C. Where existing utility services/systems** are required to be removed, relocated or abandoned, but which are still serving occupied areas, bypass such services/systems before cutting to prevent interruption to occupied areas.
- D. Locate and protect all utilities** that may be affected by cutting and patching, prior to any cutting or excavation.

### 3.03 CUTTING AND PATCHING

- A. Cutting and Patching, General:** Execute cutting, fitting and patching, excavation and fill, to as necessary to complete the Work.
1. Unless specifically indicated on Structural or Architectural Drawings, all alterations or modifications to structural elements by cutting, drilling, boring, bracing, welding and similar actions shall have written approval by the Structural Engineer of Record.
  2. Coordinate installation or application of products for integrated Work.
  3. Uncover completed Work as necessary to install or apply products out of sequence.
  4. Cut, remove and replace defective and non-conforming Work.
  5. Cut and patch as necessary to provide openings in the Work for penetration of mechanical and electrical Work.
  6. Provide all cutting, fitting or patching of work as required to make parts of the work come together and fit properly.
  7. Sloppy, careless or avoidable cutting and patching will not be tolerated and work affected will be replaced at no cost or time to contract. An aesthetically pleasing, unblemished, overall appearance of finished surfaces is a requirement of this project. Make necessary preparations and use recommended techniques with great care to ensure that all finished surfaces are acceptable to Owner. Owner will be the sole judge of visual acceptability.
  8. Provide all necessary cutting and patching work outside project limits and property line, as necessary, to complete the project.
  9. All additional cost, and time lost, caused by defective or ill-timed work shall be borne by contractor.
  10. Restore and compact areas trenched, disturbed or damaged.
  11. Custom cut new ceramic tile and acoustical panel materials to size to match existing construction. Cut in place tile material only at tile joints.
  12. Employ adequate number of skilled workers to perform cutting and patching.
  13. Test and inspect patched areas after completion to demonstrate integrity of installation.
  14. Restore substrates and exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing. Match cut materials as if new.
  15. Provide an even surface of uniform finish, color, texture and appearance to match adjoining surfaces. Remove finishes and replace with new materials, if necessary as determined by Architect, to achieve uniform color and appearance.
  16. Patch, repair or rehang in-place ceilings as necessary to provide an even-plane surface to uniform appearance.

17. Patch exterior components in a manner that restores enclosures to a weather-tight condition.
18. Where patching occurs on a painted or coated surface, repair primer and finish coats over entire surface, extending to next adjacent inside or outside corner and or material change, in all directions. Provide additional finish coats over entire surface until patch blends with adjacent surface and is not visible, at no additional cost or time to contract.

**B. Cutting:**

1. Execute cutting methods to avoid damage to adjoining Work, and which will provide appropriate surfaces to receive final finishing.
2. Execute cutting of weather-exposed, moisture-resistant elements and surfaces exposed to view by methods to preserve weather, moisture and visual integrity.
3. 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 hammering or chiseling tools will not be allowed without prior approval.

**C. Patching:**

1. Restore substrates and finishes with products to match existing construction and as specified in product Sections of the Specifications for new construction.
2. Finish surfaces flush with texture and sheen to match surrounding finishes.
3. Fit work neat and tight allowing for expansion and contraction.
4. Butt new finish to existing exposed structure, pipes, ducts, conduit, and other penetrations through surfaces.

**D. Finishing:** Refinish surfaces to match adjacent and similar finishes as used for the Project.

1. For continuous surfaces, refinish to nearest intersection or natural break.
2. For an assembly, refinish entire unit.

**E. Penetrations at Fire-Rated Construction:** At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with material in accordance with Section 07 84 00 - Firestopping and Smoke Seals, to full thickness of the penetrated element.

END OF SECTION

**SECTION 01 74 00**

**CONSTRUCTION WASTE MANAGEMENT**

**PART 1 – GENERAL**

1.01 Drawings and general provisions of the Contract, including other Division 01 Specification Sections and other technical Specification Sections apply to this Section.

1.02 SUMMARY

**A. This section includes** requirements for waste management during the work.

1. Protect the environment, both on-site and off-site, during the work.
2. Prevent environmental pollution and damage.
3. Maximize source reduction, reuse, and recycling of solid waste.

**B. Deliver a Work** that conforms to the requirements of Governing Authorities.

1.03 QUALITY ASSURANCE

**A. Maximize use of source** reduction and recycling procedures outlined in ASTM D5834 (Standard Guide for Source Reduction Reuse, Recycling, and Disposal of Solid and Corrugated Fiberboard).

**B. Diversion Goals:** A minimum 50 percent by weight of total project solid waste to be diverted from landfill.

1.04 SUBMITTALS

**A. Record Submittals:**

1. Certification of solid waste disposal and diversion. Submit on form as approved by Owner.
2. Recycled material certificates.

**PART 2 - PRODUCTS**

- Not Used -

**PART 3 – EXECUTION**

3.01 SOLID WASTE MANAGEMENT

**A. Field verify dimensions** indicated on construction documents before confirming product orders to minimize waste due to excessive materials. Where field

dimensions cannot be verified due to progress of the work, coordinate with necessary trades to determine required dimensions.

- B. Coordinate the schedule** of product deliveries in order to minimize site storage time and potential damage to stored materials and to minimize waste due to excessive materials handling and misapplication.
- C. Set aside and protect** misdelivered and substandard products and materials and return to supplier for credit.
- D. Deliver, store and handle** salvaged and recycled materials in compliance with Section 01 60 00 Material and Equipment.
- E. Collection:** Implement a recycling/reuse strategy that includes separate collection of waste materials of the following types as appropriate to the project waste and to the available recycling and reuse programs in the project area:
  - 1. Land clearing debris.
  - 2. Asphalt.
  - 3. Concrete.
  - 4. Metal.
    - a. Ferrous.
    - b. Non-ferrous.
  - 5. Wood nails and staples allowed.
  - 6. Brick / Stone Veneer.
  - 7. Acoustic Tile.
  - 8. Debris.
  - 9. Glass, colored glass allowed.
  - 10. Paper.
    - a. Bond.
    - b. Newsprint.
    - c. Cardboard and paper packaging materials.
  - 11. Plastic.
    - a. Type 1: Polyethylene Terephthalate (PET, PETE).
    - b. Type 2: High Density Polyethylene (HDPE).
    - c. Type 3: Vinyl (Polyvinyl Chloride or PVC).
    - d. Type 4: Low Density Polyethylene (LDPE).
    - e. Type 5: Polypropylene (PP).
    - f. Type 6: Polystyrene (PS).
    - g. Type 7: Other. Use of this code indicates that the package in question is made with a resin other than the six listed above, or is made of more than one resin listed above, and used in a multi-layer combination.
  - 12. Gypsum.
  - 13. Paint and paint cans.
  - 14. Carpet.

15. Insulation.
16. Others as appropriate.

**C. Salvaging:**

1. Salvaged Items for Reuse by Owner:
  - a) Clean salvaged items of dirt and demolition debris.
  - b) Wrap, pack or crate items, as necessary for protection, after cleaning. Identify contents of containers.
  - c) Store items in a secure area until delivery to Owner.
  - d) Transport items to storage area designated by Owner.
  - e) Protect items from damage during transport and storage.

**D. Recycling Waste:**

1. Designate specific areas for separation and storage of recycle materials. Keep areas neat and clean, in an orderly manner and well labeled. Arrange for timely pickups from the site and deliveries to recycling facility in order to prevent contamination of recyclable material. The contractor is responsible to determine if each specific waste stream is accepted by recycling facility.
2. Separate recyclable waste from other waste materials, trash and debris at project site to the maximum extent practical.

- E. Disposal of Waste:** Except for items or materials to be salvaged, recycled or otherwise reused, remove waste materials from project site and legally dispose in a landfill acceptable to Governing Authorities. Do not allow landfill waste materials that are to be disposed of to accumulate on-site. Do not burn or bury waste materials.

END OF SECTION

**SECTION 01 78 00****WARRANTIES AND GUARANTEES****PART 1 - GENERAL**

- 1.01 Drawings and general provisions of the Contract, including other Division 01 Specification Sections and other technical Specification Sections apply to this Section.
- A. Submission to and approval** by the Owner of the warranties and guarantees is a prerequisite to final payment under the Contract. Manufacturer's disclaimers and limitations included in warranties do not relieve contractor of obligations and requirements of Contract Documents.
- 1.02 **MANUFACTURERS' WARRANTIES:** Deliver all warranties required by Contract Documents, with Owner named as the beneficiary. In addition, for all equipment and machinery, or components thereof, bearing a manufacturers' warranty or guarantee that extends for a longer time period than the Contractor's warranty or guarantee, deliver the manufacturers' warranties or guarantees in same manner. Refer to Section 01 33 00, Paragraph "Equipment Data", for the submission of manufacturers' warranty or guarantee data.
- 1.03 **FORM OF WARRANTY:** All written warranties, except manufacturers' standard printed warranties and guarantees, shall be submitted on the Contractor's, Subcontractor's, material suppliers or manufacturers own letterhead, addressed to the Owner. All warranties and guarantees shall be submitted in duplicate, and in the form shown on the following page, signed by all pertinent parties and by Contractor in every case, with modifications as approved by Owner to suit the conditions pertaining to the warranty or guarantee, or as specified in there Contract between the Owner and Contractor.
- 1.04 **SUBMISSION OF WARRANTIES:** The Contractor shall collect and assemble all written warranties and deliver to Owner for review at least 14 days prior to Substantial Completion.
- 1.05 When correcting warranted work that has failed, remove and replace other work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted work. Costs to such removal and replacement or other work must be included in warranty.
- 1.06 When work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation, agreed to by Owner.
- 1.07 Any additional work beyond that specified or illustrated, or any modifications thereto, that are necessary for the furnishing of required warranty work shall be provided by the contractor without additional cost or time to the contract.

WARRANTY/GUARANTEE

FOR \_\_\_\_\_ WORK

We, the undersigned, hereby warranty and guarantee that the parts of the Work described above which we have furnished and/or installed for:

SOBOBA HORSESHOE VILLAGE – PHASE 2

San Jacinto, California

is in accordance with the Contract between the Owner and Contractor along with the Contract Documents and that said Work as installed will fulfill or exceed all of the Warranty and Guarantee requirements. We agree to repair or replace Work installed by us, together with any adjacent Work which is displaced or damaged by so doing, that proves defective in workmanship, material, or operation within a period of \_\_\_\_\_ ( ) year(s) from the date of final acceptance of by Owner or from the Date of Certificate of Substantial Completion, whichever is the earlier, ordinary wear and tear and unusual abuse or neglect excepted.

In the event of our failure to comply with the above-mentioned conditions within a reasonable time period determined by the Owner, after notification in writing, we, the undersigned, collectively and separately do hereby authorize the Owner to have said defective Work repaired and/or replaced and made good, and agree to pay to the Owner upon demand all moneys that the Owner may expend in making good said defective Work, including all collection costs and reasonable attorney fees.

Date: \_\_\_\_\_

(Subcontractor, Sub-subcontractor, Manufacturer or Supplier)

By \_\_\_\_\_

Title \_\_\_\_\_

State License No. \_\_\_\_\_

Date: \_\_\_\_\_

(Contractor)

By \_\_\_\_\_

Title \_\_\_\_\_

State License No. \_\_\_\_\_

Local Representative to be contacted for maintenance, repair and/or replacement service:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone Number: \_\_\_\_\_

END OF SECTION

**SECTION 03 30 00**

**CONCRETE ITEMS**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide concrete items complete as specified on drawings and required by Code.

**A. Work In This Section:** Principal items include:

1. Concrete.
2. All accessories required.

**B. Related Work Not In This Section:**

1. Substrate.

1.02 SUBMITTALS: Refer to Structural Drawings for procedures.

1.03 QUALITY ASSURANCE: Refer to Structural Drawings.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING: Refer to Structural Drawings.

**PART 2 - PRODUCTS**

2.01 MATERIALS: Provide materials and accessories required for completion of work as indicated on drawings and required by Code and approved by the Structural Engineer.

2.02 ACCESSORIES: Provide all accessories and miscellaneous items for a complete installation.

**PART 3 - EXECUTION**

3.01 INSTALLATION: All concrete work shall be properly installed in strict compliance with drawings and all Code requirements and approval by the Structural Engineer.

END OF SECTION

**SECTION 03 31 10**

**UNDER-SLAB VAPOR BARRIER/RETARDER**

**PART 1 – GENERAL**

1.01 SUMMARY

**A. Products Supplied Under This Section:**

1. Vapor barrier, seam tape, and mastic for installation under concrete slabs.
2. All accessories required for a proper installation.

**B. Related Sections:**

1. Site Preparation and Earthwork
2. Cast-in-Place Concrete

1.02 REFERENCES

**A. American Society for Testing and Materials (ASTM):** Current Edition

1. ASTM E 1745 Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs.
2. ASTM E 154 Standard Test Methods for Water Vapor Retarders Used in Contact with Earth under Concrete Slabs, on Walls, or as Ground Cover.
3. ASTM E 96 Standard Test Methods for Water Vapor Transmission of Materials.
4. ASTM F 1249 Standard Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor.
5. ASTM E 1643 Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill under Concrete Slabs.

**B. American Concrete Institute (ACI):** Current Edition

1. ACI 302.2R Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials.
2. ACI 302.1R Guide to Concrete Floor and Slab Construction

1.03 SUBMITTALS

**A. Quality Control/Assurance:**

1. Summary of test results as per paragraph 9.3 of ASTM E 1745.
2. Manufacturer's samples, literature.

3. Manufacturer's installation instructions for placement, seaming, penetration prevention and repair, and perimeter/terminating edge seal per ASTM E1643.
4. All mandatory ASTM E1745 testing must be performed on a single production roll per ASTM E1745 section 8.1
5. Contact vapor barrier manufacturer to schedule a pre-construction meeting and/or to coordinate a review of the vapor barrier installation.

1.04 WARRANTY: Refer to Section 01 78 00 – Execution Requirements: Product warranties. Warrant materials for five years against manufacturing defects, when installed in accordance with manufacturer instructions.

## **PART 2 – PRODUCTS**

2.01 ACCEPTABLE MANUFACTURERS: Equivalent products of other manufacturers, including W.R. Meadows, polyolefin film or VaporGuard by Reef Industries, will be acceptable in accordance with the "or equal" provision specified in Section 01 60 00 - Product Requirements.

### 2.02 MATERIALS

#### **A. Vapor barrier must have all of the following qualities:**

1. Permeance as tested before and after mandatory conditioning (ASTM E 1745 Section 7.1 and sub-paragraphs 7.1.1 - 7.1.5): less than 0.01 Perms [grains/(ft<sup>2</sup> · hr · inHg)].
2. Other performance criteria:
  - a. Strength: ASTM E 1745 Class A.
  - b. Thickness: Minimum of 15 mils thickness.

#### **B. Vapor barrier products:**

1. Specified Manufacturer: Stego Wrap Vapor Barrier (15-mil) by Stego Industries, (877) 464-7834 [www.stegoindustries.com](http://www.stegoindustries.com).
2. W.R. Meadows, polyolefin film, (15-mil)
3. Vaporguard by Reef Industries
4. Or approved equal, refer to section 01600 for Substitutions

2.03 ACCESSORIES: Or equal by W.R. Meadows

#### **A. Seam tape:**

1. Stego Tape by Stego Industries LLC, (877) 464-7834, [www.stegoindustries.com](http://www.stegoindustries.com).

**B. Sealing penetrations of vapor barrier:**

1. Stego Tape by Stego Industries LLC, (877) 464-7834, [www.stegoindustries.com](http://www.stegoindustries.com).
2. Stego Mastic by Stego Industries LLC, (877) 464-7834 [www.stegoindustries.com](http://www.stegoindustries.com).

**C. Perimeter/terminated edge seal:**

1. Stego Term Bar by Stego Industries LLC, (887)464-7834 [www.stegoindustries.com](http://www.stegoindustries.com).

**D. Penetration prevention:**

1. Beast Foot by Stego Industries LLC, (887)464-7834 [www.stegoindustries.com](http://www.stegoindustries.com).

**PART 3 – EXECUTION**

3.01 PREPARATION

**A. Ensure that subsoil is approved by Architect or Geotechnical Engineer.**

1. Level and compact base material.

3.02 INSTALLATION

**A. Install vapor barrier in accordance with ASTM E1643.**

1. Unroll vapor barrier with the longest dimension parallel with the direction of the concrete placement and face laps away from the expected direction of the placement whenever possible.
2. Extend vapor barrier to the perimeter of the slab. If practicable, terminate it at the top of the slab, otherwise (a) at a point acceptable to the structural engineer or (b) where obstructed by impediments, such as dowels, waterstops, or any other site condition requiring early termination of the vapor barrier. At all points of termination (block-outs, interior grade beams, perimeter edge, etc.), mechanically seal vapor barrier to the slab itself using Stego Crete Claw, or approved equal, per manufacturer's instructions. Contractor shall get Architects and Geotechnical Engineers approval prior to installation of each system type.
  - a) Stego Crete Claw: Seal vapor barrier to the entire slab perimeter using Stego Crete Claw, or approved equal, per manufacturer's instructions.
  - b) StegoTack Tape/Stego Term Bar: Seal vapor barrier to the entire perimeter wall or footing/grade beam with double-sided StegoTack

Tape, both Stego Term Bar and StegoTack Tape, or approved equal per manufacturer's instructions. Ensure the concrete is clean and dry prior to adhering tape.

3. Overlap joints 6 inches and seal with manufacturer's seam tape.
4. Apply sealing accessories to a clean and dry vapor barrier.
5. Seal all penetrations (including pipes) per manufacturer's instructions.
6. For interior forming applications, avoid the use of stakes driven through the vapor barrier. Use female-threaded screed pad posts with nail holes and insert them into Beast Foot, or use alternate forming system that will not puncture the vapor barrier. Ensure Beast Foot's peel-and-stick adhesive base is fully adhered to the vapor barrier.
7. Repair damaged areas with a patch of vapor barrier material, overlapping damaged area 6 inches and sealing all sides with manufacturer's seaming tape.
8. For a vapor barrier-safe, fixed-elevation concrete screeding application, install Beast Screed, or alternate screed system that will not puncture the vapor barrier, per manufacturer's instructions prior to placing concrete.

END OF SECTION

**SECTION 03 34 00**

**LOW DENSITY CONCRETE**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide low density concrete floor and sound proofing underlayments complete as indicated, specified, and required.

**A. Related Work Not In This Section:**

1. Cast-in-place concrete and cement finish, sections 03 30 00 and 03 35 00.
2. Rough carpentry, section 06 10 00.

1.02 QUALITY ASSURANCE:

**A. Applicator:** Employ applicator approved by concrete manufacturer.

**B. Mix Design:** Minimum 2,000 psi 28-day compressive strength, maximum wet density of 115 pounds per cubic foot, conforming to concrete manufacturer's directions.

**C. Tolerance:** Produce smooth finished surfaces that are level within a tolerance of 1/8" in 10-feet at any location or direction.

**D. Acousti-Mat II Installers Qualifications:** Installation of acoustic-Mat II 3/8" shall be by an approved applicator authorized by Maxxon Corporation

1.03 JOB CONDITIONS: Do not permit traffic on floors for 72 hours after installation of concrete fill nor until sufficiently hardened.

**PART 2 - PRODUCTS**

2.01 MATERIALS:

Gyp-Crete 2000/3.2K  
Floor Underlayment:

Provide mix design in accordance with manufacturer's specifications for a minimum compressive strength of 2000 psi at 28 days, and maximum wet density of 115 lbs. per cubic foot, or system by another manufacturer approved by the Architect.

Sand:

ASTM C33, 3mm or less washed masonry or plaster sand, clean and from approved source.

Subfloor Primer:

Maxxon Floor Primer.

Sealer:

Maxxon Overspray.

Water:

Potable and from domestic source.

Leak Prevention:	Fill cracks and voids with a quick setting drywall patching material where leakage of material could occur.
Foam Isolators:	Install foam isolators at all perimeter(s) and as detailed on drawings or as required by manufacturer.
Sound Proofing:	Provide Acousti-mat II 3/8” matting at all areas as required by Architect, install mat in conformance with manufacturers specifications.

2.02 CONCRETE MIXING: Deliver cement and sand slurry to site in transit mix trucks, and mix concrete to the required density.

### **PART 3 - EXECUTION**

3.01 PREPARATION: Prepare in accordance with manufacturers specifications. Check that substrates are dry, smooth, clean. Protect adjacent products or materials from any moisture absorption that may be detrimental. Apply leak prevention material to cracks and voids. Set temporary screeds at maximum 8-foot intervals.

3.02 PLACING: Place and finish flooring and acoustical materials in accordance with manufacturers' specifications. Pump self-leveling concrete into place, screed, float, and steel trowel and retrowel to level smooth surface within specified tolerance. Cure according to concrete manufacturer's directions. Install foam isolator from wall materials as required mitigating noise transmitting.

3.03 CLEAN-UP: Upon completion, remove surplus materials and equipment from site.

3.04 FIELD QUALITY CONTROL: Refer to Section 01 45 00.

- A. **Density Checks:** Applicator shall perform wet density checks at maximum two hour intervals during placing. Variation greater than specified density at discharge points will require modification of mix design at no extra cost to Owner.

END OF SECTION

**SECTION 03 35 00**

**CONCRETE FINISHING**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Perform and provide all concrete finishing required to complete the Work, except for concrete finishing specified to be performed under other Sections and or Landscape Drawings.

**A. Work In This Section:** Principal items include:

1. Samples and submittals.
2. Finishing of exposed formed concrete.
3. Final slab finishing and curing.
4. Concrete stair finish.

**B. Related Work Not In This Section:**

1. Furnishing, erection, and removal of forms.
2. Furnishing, placing, patching, and initial curing of cast-in-place concrete unless otherwise specified in section 03 30 00.
3. Coordinate with Landscape drawings for site concrete colors and finishes. Provide color and finish to Building concrete matching site concrete when surfaces abut unless indicated otherwise.

1.02 QUALITY ASSURANCE: As specified in Section 03 30 00.

1.03 SUBMITTALS: Refer to Section 01 33 00 for procedures.

**A. Product Data:** Submit for the following:

1. Curing-sealer-hardener.

**B. Site Samples:** Prepare following Samples at the site, cast in the directed locations and orientations. Prepare as many Samples of each type of concrete as are required for approval. Remove Samples from the site when no longer needed and removal is approved. Approved Samples may be part of permanent construction if meeting all other requirements shown and specified and are so approved. Use form and concrete materials previously approved under Section 03 10 00 and 03 30 00.

1. Slab Samples: Prepare minimum 4-foot square Samples of each required slab finish excluding only monolithic trowel and steel float finishes. Include a transverse expansion joint, scoring, and edging.

## **PART 2 - PRODUCTS**

2.01 MATERIALS: Furnish materials conforming to Section 03 30 00, as applicable and following requirements:

Curing-sealer-  
hardener:

Ashford Formula by Curecrete Chemical Company, Inc. distributed by BMSA inc. (949) 233-2127 or UniSeal by Unitex (816) 231-7700 or approved equal, applied and warranted as specified herein.

## **PART 3 - EXECUTION**

3.01 SLAB FINISHES: Produce finish slab surfaces level or sloped as shown with maximum deviation of 1/8" from a 10-foot straightedges. Keep surface moist with a fine fog spray of water as necessary. Dusting with dry cement or sand during finishing operations is not permitted. Finish all slab edges and joints with an edging tool. Match the approved Sample panels as directed by Architect. Apply the following finishes as indicated, specified, directed, and applicable.

- A. **Rough Slab Finish:** After initial set, coarse broom the slab surface and expose coarse aggregate. Apply on slabs to receive deferred mortar setting beds or cementitious toppings or slabs.
- B. **Monolithic Trowel Finish:** For slab and flatwork surfaces not indicated or specified to receive another finish. After surface water disappears and floated surfaces are adequately hardened, steel trowel and retrowel concrete to a smooth surface. After concrete has set sufficiently to ring the steel trowel, retrowel to a smooth uniform finish free of trowel marks and blemishes. Avoid excessive retroweling that produces burnished areas.
- C. **Steel Float Finish:** Same as for monolithic trowel finish except omit the second retroweling. Apply on following areas and surfaces:
  - 1. Resilient floor covering areas.
  - 2. Carpeted areas.
  - 3. Thin-set tile areas.
  - 4. Slabs to receive wood flooring.
- D. **Swirl Non-Slip (Sweat Trowel) Finish:** Same as for monolithic steel trowel finish less second retroweling. When ready, produce non-slip finish by circular motion and slight lifting of trowel, done in regular pattern. At walking areas, apply smooth finish 1" wide at all edges, expansion joints, and scoring. Apply on following surfaces:

1. Exterior vehicle traffic slabs.
2. Exterior concrete walks and decks.
3. Other slabs where specified or directed.

**E. Scoring:** Provide where shown or directed, using tool of approved size and profile. Run score lines straight and of uniform appearance. If scoring is not indicated, obtain Architect's instructions not less than two working days before the day slab concrete is placed.

3.02 **SLAB CURING:** Promptly apply curing media as soon as finishing is complete without marring surfaces and in any case on same day. Curing compound shall be reviewed and approved by Structural Engineer. Apply liquid compound in accordance with the manufacturer's published application rates; apply 2 spray coats, with second coat at right angle to first coat. Cover adjoining surfaces. Equip spray nozzles with windshield suitable for wind conditions.

- A. Curing Period and Protection:** Maintain all curing media intact and sealed for 10 days minimum after application and 5 days for high early strength concrete. Keep foot traffic on the curing surfaces to minimum possible and completely off liquid compound cured surfaces; vehicular traffic is not permitted on the surfaces until curing is completed. Immediately restore all damaged or defective curing media.
- B. Restriction:** Do not apply liquid membrane-forming curing compounds on any concrete to receive or bond to concrete or mortar, or on any surfaces to receive subsequent material or finish unless such use and the specific compound used are approved by manufacturer of the material or finish to be applied, and verify all such use with related trades. Do not apply curing compounds on slabs to receive elastomeric or bituminous type coatings.
- C. Liquid Membrane-Forming Curing Compound:** Use on exterior slabs and paving but subject to above restriction. Do not use on interior slabs.
- D. Sheet Curing:** Use Kure-N-Seal or standard brand conforming to ASTM C171 curing sheet material. Seal all laps and edges with plastic pressure-sensitive tape, and immediately repair tears during the curing period. Verify that surfaces remain damp for the full curing period; if necessary, lift sheet, wet surfaces with clean water, then replace and reseal the sheeting. Use on surfaces where curing compound is not permitted.
- E. Water Curing:** Option to either liquid membrane-forming curing compound or sheet curing method. Keep concrete continuously wet for entire curing period.

**F. Curing Compound:**

1. General: Submit and obtain approval for curing compounds conforming to ASTM C309 and ACI 308. Employ material manufacturer's authorized applicator. Issue manufacturer's 20-year material and 10-year labor warranty to Owner. Use either one application of Ashford Formula, applied immediately following slab finishing as curing agent, or one coat of "UniSeal". Apply on following surfaces:
    - a. Exterior concrete walking slabs.
    - b. Exterior vehicle traffic slabs.
  2. Option: Curing compound may be used to cure interior slabs to receive resilient floor covering or carpet, subject to requirements of Paragraph "Restriction" above, and to cure all other exterior slabs and paving. Materials may be applied by Contractor's personnel and the warranty is not required.
- 3.03 CONCRETE STAIR FINISH: Slope stair treads 1/8" from base of the risers to the nosings. Run nosings straight and level to rigid templates. Form risers as indicated or directed, and apply burnished steel trowel finish. On landings and treads, apply broom finish across stair run and cure all concrete stair surfaces. Provide 2" contrasting color warning strip 1" maximum from edge of nosing of each exterior stair and top and bottom nosing only on interior stairs.

END OF SECTION

**SECTION 03 35 11**

**POLISHED CONCRETE FINISHING**

**PART 1 - GENERAL**

1.01 SECTION INCLUDES:

- A. Surface sealers and hardeners** and polishing of concrete floors and slabs.

1.02 REFERENCE STANDARDS:

- A. ASTM D2370** - Standard Test Method for Tensile Properties of Organic Coatings; 1998 (Reapproved 2010).

1.03 SUBMITTALS:

- A. See Section 01 33 00** - Submittal Procedures
- B. Product Data:** Manufacturer's published data on each finishing product, including information on compatibility of different products and limitations.
- C. Maintenance Data:** Provide data on maintenance and renewal of applied finishes.

1.04 QUALITY ASSURANCE:

- A. Installer Qualifications:**
1. Applicators shall be factory trained and certified.
  2. Applicators shall have experience with installation of the size and type of this project.
- B. Manufacturer's Certification:** Provide letter of certification from the concrete finish manufacturer stating that the installer was factory train and is certified to install the products per the procedures and installation requirements of the work in this section.
- C. Mock-Up:**
1. Apply mock-up to demonstrate typical joints, surface finish, color variation (if any), and standard of workmanship.
  2. Mock-Up Size: 10 feet square.
  3. Locate where directed.
  4. Mock-up may remain as part of the work.

**D. Protection:**

1. No satisfactory chemical or cleaning procedure is available to remove petroleum stains from the concrete surface. Prevention is therefore essential.
  - a. The slab must be protected at all times.
2. Application shall take place 10 days prior to installation of equipment and substantial completion, thus providing an uninhibited concrete floor for application.
3. Close floor area to traffic during application, and after application for the time period recommended in writing by the manufacturer.

**E. Pre-Installation Conference:** Conduct conference at project site.

1. Agenda:
  - a. Examine substrate, with installer and manufacturer's representative, for conditions affecting performance of finish.
  - b. Review manufacturer's installation requirements.

1.05 DELIVERY, STORAGE AND HANDLING:

- A. Deliver materials in manufacturer's** sealed packaging, including application instructions.
- B. Maintain record** of number of container used.

**PART 2 - PRODUCTS**

2.01 MANUFACTURERS:

**A. Advanced Floor Products Inc:**

1. Retro-plate 99 Concrete Polish System, Bases of Design

**B. L&M Construction Chemicals:**

1. Equal Product to Bases of Design

**C. Scofield:**

1. Equal Product to Bases of Design

2.02 MATERIALS:

**A. Hardening/Sealing Agent:**

1. Performance Criteria:
  - a. Abrasion Resistance: ASTM C779 - Up to 400% increase in abrasion resistance.
  - b. Impact Strength: ASTM C805 - Up to 21% increase impact strength.
  - c. Ultra Violet Light and Water Spray: - ASTM G23-81 - No adverse effect to ultra violet light and water spray.
  - d. Reflectivity: Up to 30% increase in reflectivity.
  - e. Slip Resistance.
  
- B. Neutralizing Agent:** Tri-sodium Phosphate.
  
- C. Water:** Potable.
  
- D. Concrete Color Dyes - Solvent or Water Based:**
  1. AmeriPolish Dye.
  2. Colors: As selected by Architect from manufacturer's full range of colors.
  
- E. Heavy Duty Concrete Sealer:**
  1. RetroGuard
  2. RetroPel
  
- F. Concrete Joint Filling and Concrete Repair Material:**
  1. CreteFili Pro Series by ADVANCED FLOOR PRODUCTS.
    - a. CreteFill Pro 65, 75, 85 appropriate joint filler.
    - b. CreteFill Pro Crack Repair
    - c. CreteFill Pro Spall Repair
  2. CreteFill Ro Series:
    - a. Color: Match color of floor as approved by Architect.

### **PART 3 - EXECUTION**

#### 3.01 EXAMINATION:

- A. Verify that floor surface** is acceptable to receive the work of this section.

#### 3.02 APPLICATION:

- A. Start any of the floor** finish applications in the presence of the manufacturer's technical representative.
  
- B. Floor Preparation:**

1. Floor to be prepared for the RetroPlate System with specified diamond grinding steps and methodology as specified by Advanced Flooring Products, beginning with grinding the floor surface to expose:
  - a. Class B - Salt/Pepper Finish: To remove approximately 1/32 to 1/16 inch of concrete, exposing small aggregate.

**C. RetroPlate 99, Densifier application:**

1. Apply RetroPlate 99 in accordance with manufacturer's application instructions.

**D. Concrete Polishing Levels:**

1. Level 1 - Low gloss: Honed/matte finish, polished up to and including 400 grit resin diamonds, a gloss reading of 10-20.

**E. Concrete Heavy Duty Sealer:**

1. Apply RetroGuard or RetroPel to polish concrete surface per manufacturer's application instructions.

3.03 WORKMANSHIP AND CLEANING:

- A. Protect adjoining surfaces** from operational splatter and damage.
- B. Remove debris from jobsite:** Dispose in accordance with local regulations.

3.04 PROTECTION:

- A. Protect finished work** until fully cured in accordance with manufacturer's written recommendations.

END OF SECTION

**SECTION 04 20 00**

**CONCRETE MASONRY UNIT ITEMS**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide concrete masonry unit items complete as specified on drawings and required by Code.

**A. Work In This Section:** Principal items include:

1. Concrete masonry unit items.
2. All accessories required.

**B. Related Work Not In This Section:**

1. Substrate.

1.02 SUBMITTALS: Refer to Structural Drawings for procedures.

1.03 QUALITY ASSURANCE: Refer to Structural Drawings.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING: Refer to Structural Drawings.

**PART 2 - PRODUCTS**

2.01 MATERIALS: Provide materials and accessories required for completion of work as indicated on drawings and required by Code and approved by the Structural Engineer.

2.02 ACCESSORIES: Provide all accessories and miscellaneous items for a complete installation.

**PART 3 - EXECUTION**

3.01 INSTALLATION: All concrete work shall be properly installed in strict compliance with drawings and all Code requirements and approval by the Structural Engineer.

END OF SECTION

**SECTION 04 71 00**

**STONE MASONRY**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide stone masonry items complete as indicated, specified, and required.

**A. Work In This Section:** Principal items include:

1. Submittals.
2. Aesthetic criteria.
3. Stone masonry veneer.
4. Corner and cap pieces as required for proper installation.

**B. Related Work Not In This Section:**

1. Wood stud backing.
2. Plaster and exterior gypsum sheathing backing for simulated stone veneer.
3. Plywood backing supplies by rough carpentry.

1.02 QUALITY ASSURANCE:

**A. Qualifications of Manufacturer:** Obtain Owner's and Architect's approval of manufacturer's qualifications prior to bidding. Submit Samples and data as Owner or Architect may require.

**B. Supervision:** Perform Work of this Section under supervision of a capable specialist superintendent.

1.03 STONE - AESTHETIC CRITERIA:

**A. Stone or Blocks:** Fabricator shall procure sufficient size and quantity of stone or blocks to satisfy the aesthetic criteria established herein; including a surplus to handle anticipated shipping, assembly and erection damage.

**B. Color Range:** A color range shall be established. The Owner and/or Architect shall sign and date those stone or blocks that are approved.

**C. Blending:** Blending shall be the responsibility of the fabricator, and production sequence and shipment shall be coordinated with the installer to facilitate assembly and sequence of erection.

1.04 **SUBMITTALS:** Refer to Section 01 33 00 and Aesthetic Criteria in this Section for procedures. Obtain approval of all submittals prior to production of Stone.

**A. Shop Drawings:**

1. Stone Wall Veneer: Submit Shop Drawing detailing jointing, anchorage, sections, dimensions, and layout drawings and elevations for all Work of this Section in accordance with the Masonry Institute of America recommendations.

**B. Samples:** Obtain Architect's instructions and examine the file Samples in Architect's office. Show range in quality, color, texture, and finish that will occur. Label Samples for full identification. Prepare and submit the following:

1. Three Samples of stone veneer type required and showing each required veneer finish.
2. Two Samples each type of stone anchor proposed for use.
3. Sample of thin-set method for installation.
4. Such other Samples Architect may request.

**C. Product Data:** Submit the following:

1. Manufacturer's data and use instructions for admix.
2. Manufacturer's data and proportioning instructions for mortar admix.
3. Manufacturer's data and instructions for joint sealants.

**D. Sample (Mock-Up) Panels:** Prepare sample panels at the site as are required for approval. Conform installed masonry to the approved panels. Approved panels may be a part of the permanent construction. Provide mock up in accordance with instructions as detailed on the drawings.

1.05 **SUPPLEMENTARY PARTS:** Provide and install all supplementary parts necessary to complete the work as described on the Drawings and herein specified, though not definitely shown or specified. All necessary design, engineering, anchorage assemblies, fasteners, clips, bracing necessary for the support and anchorage of the stone system to be base structure shall be provided by the Contractor.

1.06 **PRODUCT DELIVERY, STORAGE AND HANDLING:** Carefully load and pack stone for shipment, using special care to prevent damage in transit. Do not use material that could cause discoloration or staining for blocking, packing, or strapping. At site, store material under cover on protective pads or timbers.

**PART 2 - PRODUCTS**

2.01 BASIC MATERIALS:

Portland cement:	ASTM C150, Type II, low alkali. Masonry cement is not permitted. Use only one brand.
Hydrated lime:	ASTM C207, Type S.
Mortar:	ASTM C270, Provide Mac Mortar Poly V.M.B., Type S mortar by R-Crete, Inc. Orco Blended Products (909) 862-2480 or approved equal. No field mixing.
Color pigment:	Pure ground mineral oxides, non-fading, alkali and lime proof, factory packaged.
Water:	From domestic potable source.

2.02 SIMULATED STONE AND RELATED MATERIALS:

**A. Exterior Simulated Stone:**

1. Provide stone masonry as scheduled or as selected by the Architect manufactured by Coronado Stone or approved equal, stone thickness consistent so that face of stack is flush with each other, secure in accordance with Code as indicated on drawings for exterior veneer, horizontal lay-up, random pattern as specified, required to meet structural requirements shown, all matching approved full scale field mock-up and Master Samples on file in the Architect's office.

**B. Veneer Anchors:** Where required provide stainless steel anchors unless otherwise approved, of minimum 12 gage for exterior veneer.

**C. Spacers:** Polyvinyl chloride strips, stainless steel, or equivalent, not subject to damage by water or alkali in mortar.

**D. Sealant:** Conforming to Section 07 90 00, colors as approved.

**E. Epoxy Adhesive:** Type supplied or recommended by stone manufacturer.

2.03 ANCHORAGE MATERIALS: Standard product steel types, all galvanized in accordance with ASTM A123 unless otherwise approved by the Masonry Institute of America recommendations.

2.04 MORTAR PROPORTIONS AND MIXING: Accurately measure all materials by volume using calibrated containers. Shovel measurements are not acceptable. Proportion admixes according to manufacturer's directions for each intended use. Minimum compressive strengths of 2,000 psi for mortar at 28 days.

- A. **Veneer Joint Mortar:** Provide Mac Mortar Poly V.B.M, Type S mortar by R-Crete, Inc. Orco Blended Products (909) 862-2480 or approved equal. No field mixing, color to match approved Sample.
- B. **Mixing:** Factory premixed, at site add water and mix in accordance with manufacturer's recommendations. Place the required water in an operating machine mixer; then mix not less than 5 minutes.

### **PART 3 - EXECUTION**

- 3.01 **INSPECTION:** Refer to Section 01 45 00, Article "Verification of Conditions". Report to the Architect in writing all conditions that prevent or interfere with correct installation of Work of this Section, and do not install the Work of this Section until such adverse conditions are corrected; this does not relieve Contractor from the responsibility for proper preparation of the surfaces. Obtain actual site measurements and verify actual site conditions prior to fabrication of stone. Check that grounds, outlet and receptacle boxes, fixtures, and like fittings are in place and that chases or other openings in walls or backings are closed.
- 3.02 **STONE VENEER INSTALLATION:** Conform to approved submittals. Perform drilling as required for Work of other trades neatly and accurately. Do not install stone units having defects of any kind on exposed faces or edges; patching or sticking is not permitted.
- A. **Anchoring:** Secure each piece of veneer according to Code and approved submittals.
  - B. **Wall Veneer:** Make joints dry stacked as detailed on drawings. Install all veneer units to match Architect's approved site sample.
  - C. **Joints:** Set joints dry stacked.
  - D. **Joint Size:** Make stone joints dry stacked in accordance with full scale mock-up approval by Architect.
  - E. **Adhesion Set Veneer:** Clean backing and keep dampened for at least 8 hours before placing any veneer. Install veneer by the mortar adhesion method using Type S mortar as specified above in accordance with Code.
  - F. **Expansion Joints:** Provide expansion joints where such joints occur in the substrates, where structures, and where indicated or directed, nominal 3/8" width unless otherwise indicated and extending for entire depth of mortar setting bed. Clean and fill expansion joints with joint backing, bond breaker, and sealant conforming to approved submittals according to Section 07 90 00, sealant color and tooling to match approved site sample joints.

KTGY  
SOBOBA HORSESHOE VILLAGE – PHASE 2  
San Jacinto, California

STONE MASONRY  
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- 3.03 CLEANING: Clean stone with 1 part vinegar and 5 parts water according to the manufacturer's instructions, rinse, and free of cleaning marks or smudges. Clean stone surfaces with brushes and water, and remove all mortar residue and other substances. Leave surfaces clean and ready for acceptance.

END OF SECTION

**SECTION 05 10 00**

**STRUCTURAL STEEL ITEMS**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide structural steel items complete as specified on drawings and required by Code.

**A. Work In This Section:** Principal items include:

1. Structural steel items.
2. All accessories required.

**B. Related Work Not In This Section:**

1. Substrate.

1.02 SUBMITTALS: Refer to Structural Drawings for procedures.

1.03 QUALITY ASSURANCE: Refer to Structural Drawings.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING: Refer to Structural Drawings.

**PART 2 - PRODUCTS**

2.01 MATERIALS: Provide materials and accessories required for completion of work as indicated on drawings and required by Code and approved by the Structural Engineer.

2.02 ACCESSORIES: Provide all accessories and miscellaneous items for a complete installation.

**PART 3 - EXECUTION**

3.01 INSTALLATION: All structural work shall be properly installed in strict compliance with drawings and all Code requirements and approval by the Structural Engineer.

END OF SECTION

**SECTION 05 50 00**

**METAL FABRICATIONS**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide miscellaneous metal fabrications complete as indicated, specified, and required.

**A. Work In This Section:** Principal items include:

1. Steel ladders.
2. Gratings and frames.
3. Above-ceiling supports.
4. Steel angle guards.
5. Bollards.
6. Non-standard connectors for wood framing.
7. Closure fencing and gates as detailed on landscape drawings.
8. All other miscellaneous metal fabrications required to complete the Work.

**B. Related Work Not In This Section:**

1. Finish painting.
2. Setting of anchor bolts and inserts in concrete.
3. Steel backing plates on stud walls.
4. Ornamental metal.

1.02 QUALITY ASSURANCE:

**A. Reference Standards:** Conform to the following as applicable:

1. AISC Standards: Code of Standard Practice for Steel Buildings and Bridges; Specification for the Design, Fabrication and Erection of Structural Steel for Buildings; and Steel Construction Manual.
2. AWS Standards: AWS D1.1, Structural Welding Code.

**B. Inserts and Anchorages:** Furnish inserts and anchoring devices which must be set in concrete or built into masonry for the installation of miscellaneous metalwork. Provide setting drawings, templates, instructions and directions for installation of anchorage devices. Coordinate delivery with other work to avoid delay.

1.03 SUBMITTALS: Refer to Section 01 33 00 for procedures.

**A. Shop Drawings:** Submit Shop Drawings fully detailing all Work of this Section, including accessories, fastenings, and welding. Include minor connections and

fastenings not indicated or specified to meet required conditions; indicate in detail on Shop Drawings.

**B. Samples:** Submit if requested by Architect.

1.04 **PRODUCT DELIVERY AND HANDLING:** Protect materials from damage during shipping, handling and storage. Work showing dents, creases, deformations, weathering, or other defects is not acceptable. Deliver welding electrodes to site in unbroken packages bearing manufacturer's name and contents identification.

1.05 **JOB CONDITIONS:** Verify conditions according to Section 01 45 00. Verify all field measurements as required. Report any major discrepancy between the Drawings and field dimensions to Architect before fabrication of Work. Exercise caution to protect concrete floor surfaces and adjacent Work from damage.

## **PART 2 - PRODUCTS**

2.01 **BASIC MATERIALS:** Furnish materials conforming to the following:

Steel shapes:	ASTM A36.
Steel tubing:	ASTM A500, ASTM A501, or ASTM A36.
Steel pipe:	ASTM A120 standard weight for general use; ASTM A53 Grade B where used for structural purposes.
Copper Plate:	ASTM B370, 20 oz. minimum unless otherwise required by Drawings.
Stainless Steel:	Type 304, 20 gage, stainless steel, finish as scheduled on drawings or as selected by Architect, temper best suited for the purpose, minimum 3/16" thickness unless otherwise indicated on drawings.
Bolts and nuts:	ASTM A307.
Electrodes:	AWS D1.1, E70XX Series as required for intended use.
Primer:	Red Oxide Primer or equal.
Non-shrink grout:	Master Builders "Embeco", W. R. Grace "Vibro-foil", or equal.
Metallizing:	Provide zinc Metalized "Galvalume" coatings on exposed metal elements where indicated or scheduled on drawings, apply in accordance with applicator specifications and ASTM A792 for this factory process.
Galvanizing:	ASTM A123, hot dip, 2.0 ounce psf on actual surface with minimum 1.8 ounce on any specimen.
Galvanizing repair material:	All States Galvanizing Powder, Drygalv by American Solder and Flux, or equal hot applied material, or anodic zinc-rich galvanizing repair paint conforming to MIL-P-21035.

## 2.02 ANCHORS

- A. Threaded-Type Concrete Inserts:** Galvanized ferrous castings, internally threaded to receive 3/4-inch-diameter machine bolts; either malleable iron complying with ASTM A47 or cast steel complying with ASTM A27; hot-dip galvanized in compliance with ASTM A153.
- B. Wedge-Type Concrete Inserts:** Galvanized box-type ferrous castings, designed to accept 3/4-inch-diameter bolts having special wedge-shaped heads; either malleable iron complying with ASTM A47 or cast steel complying with ASTM A27; hot-dip galvanized in compliance with ASTM A153
  - 1. Provide carbon steel bolts having special wedge-shaped heads, nuts, washers and shims; all galvanized in compliance with ASTM A153.
- C. Slotted-Type Concrete Inserts:** Galvanized 1/8-inch-thick pressed-steel plate complying with ASTM A283; box-type welded construction with slot designed to receive 3/4-inch-diameter square-head bolt and with knockout cover; hot-dip galvanized in compliance with ASTM A386.
- D. Masonry Anchorage Devices:** Expansion shields; FS FF-S-325.
- E. Toggle Bolts:** Tumble-wing type; FS FF-B-388, type, class and style as required.

## 2.03 FASTENERS

- A. General:** Provide zinc-coated fasteners with galvanizing complying with ASTM A153 for exterior use or where built into exterior walls. Select fasteners for the type, grade and class required for the installation of miscellaneous metal items.
- B. Standard Bolts and Nuts:** ASTM A307, Grade A, regular hexagon head.
- C. Lag Bolts:** FS FF-B-561, square-head type.
- D. Machine Screws:** FS FF-S-02, cadmium-plated steel.
- E. Wood Screws:** FS FF-S-111, flat-head carbon steel.
- F. Plain Washers:** FS FF-W-92, round, general-assembly-grade carbon steel.
- G. Lock Washers:** FS FF-W-84, helical, spring-type carbon steel.

- 2.04 GENERAL FABRICATION REQUIREMENTS:** Conform to the approved submittals, reference standards as applicable to the Work, and the requirements herein. Fabricate and form the Work to meet actual installation conditions as verified at the site. Obtain

necessary templates and information and provide all holes and drilling indicated or required for securing Work of other trades to metal fabrications.

- A. Welding:** Conform to AWS D1.1, as modified by referenced AISC Standards, and as indicated or noted on Drawings. Unless otherwise indicated or specified, weld joints by shielded electric-arc method. Grind exposed welds subject to contact to smooth surfaces free of holes, slag, or other defects, flush with adjoining surfaces. No finishing treatment is required for permanently concealed welds and other exposed welds except as specified herein. Cut out defective welding with chisel or air arc and replace.
- B. Shop Priming:** Clean all exterior exposed steel in accordance with SSPC-SP6 Commercial Blast Clean. Apply Tnemec 90-97 Tnemec-Zinc (or approved equal) to all exterior exposed surfaces @ 2.5 to 3.5 mils DFT. 90-97 meets AISC slip coefficient requirements as a Class B rating. Clean all interior steel in accordance with SSPC-SP2 Hand Tool Clean and /or SSPC-SP3 Power Tool Clean. Apply Tnemec 10-99 Primer (or approved equal) to all interior steel surfaces @ 2.0 to 3.5 mils DFT.
- C. Galvanizing:** Galvanize specified items after fabrication is completed. Produce coating free of roughness, whiskers, unsightly spangles, icicles, barbs, sags, and other surface blemishes. Provide a zinc coating for all miscellaneous metal items (except where embedded in concrete or masonry), using the hot-dip process after fabrication.
1. ASTM A153 for galvanizing of iron and steel hardware.
  2. ASTM A123 for galvanizing of rolled, pressed and forged steel shapes, plates, bars and strip 1/8 inch thick and heavier.
  3. ASTM A386 for galvanizing of assembled steel products.
- D. Carpenter's Ironwork:**
1. Furnish bent or otherwise custom-fabricated bolts, plates, anchors, hangars, dowels and other miscellaneous steel and iron shapes as required for framing and supporting woodwork and for anchoring or securing woodwork to concrete or other structures. Straight bolts and other stock rough hardware are specified in Division 6 Sections.
  2. Manufacture or fabricate items of sizes, shapes and dimensions required. Furnish malleable-iron washers for heads and nuts which bear on wood structural connections; elsewhere furnish steel washers.
- E. Miscellaneous Items:** Fabricate items not specifically mentioned according to the Drawings, approved Shop Drawings, and as required to complete the entire Work. Galvanize exterior items and shop prime interior items unless otherwise shown or specified.

**PART 3 - EXECUTION**

3.01 GENERAL INSTALLATION REQUIREMENTS:

- A. **Grouting:** Provide grouting for Work of this Section as shown, specified, and required. Use non-shrink grout and conform to manufacturer's directions.
- B. **Galvanizing Repair:** Wire brush welds and damaged coating to clean bright metal. Apply one coat of galvanizing repair paint where surfaces are concealed or are to be finish painted. Use the specified hot-applied galvanizing repair compound where surfaces remain exposed and unpainted.
- C. **Shop Prime Coat Repair:** Do not apply metal primer in wet weather unless steel is protected from dampness and is dry. Clean field welds, field bolts, and all damaged shop primer after erection and apply a spot coat of the same primer used for the shop coat.
- D. **Fasteners:** Provide fasteners and connectors of approved types as required for the installations, whether or not indicated. Provide galvanized fasteners for galvanized items and for exterior use.

3.02 SPECIFIC ITEMS: List of items hereinafter is not necessarily complete. Check all Drawings, other Sections of the Specifications, and with other trades, and provide miscellaneous metal fabrications as required to complete the entire Work.

- A. **Steel Ladders:** Continuously weld joints and grind smooth and flush. Fixed ladders shall conform to the requirements of CCR Title 8, Section 3277 - Fixed Ladders. Materials to be 3/4" diameter rods at 12" on center for rungs and flat bar 2-1/2" by 3/8" thick for stringers. Fabricate and install in accordance with approved shop drawings. Where indicated on drawings fabricate a steel plate security door hinged over the ladder with attachment to lock.
- B. **Above-Ceiling Supports:** Provide steel hangers, supports, attachments, and other framing for support of ceiling-hung items. Conform to approved Shop Drawings of related trades.
- C. **Custom Fabrications:** Fabricate as shown, exposed surfaces given a finish as selected by Architect. After installation, buff to high polish. Match the approved Sample.
- D. **Non-Standard Connectors for Framing:** Fabricate as detailed or required for each item. Deliver to trade for installation.
- E. **Pipe Bollards:** Fabricate as detailed on drawings using heavy weight galvanized steel pipe set into concrete and filled, round concrete at top to shed water.

- F. Gratings:** By Ryerson, Borden or Irving, or equal as indicated on drawings, galvanized steel gratings, frames and covers, unless otherwise selected by the Architect, bearing bars spaced for maximum 1/2" clear opening and sized for 100 psf live load. Fabricate gratings in sections weighing not over 75 pounds per panel.
- G. Pipe Railings:** Standard weight steel pipe, joints mitered at angles and coped at intersections unless otherwise shown, and continuously welded, welds ground smooth and flush. Provide cast malleable steel brackets with mounting plates for all railings on walls. Return exposed rail ends to walls unless otherwise shown. Metalize exterior railings only. Handrail brackets is designed based on the use of Julius Blum No. 386, 1386 where galvanized, malleable iron with concealed center fasteners, or approved equal. Locate at 48" on center maximum. Provide backing plate spacer appropriate to substrate and secure to structural substrate with 3/8" diameter bolt as recommended by manufacturer.
- H. Trash Enclosure Gates:** Fabricate as detailed, frame and support posts to be galvanized steel tube and angles, continuously weld joints and grind smooth and flush. Cover with materials as detailed on drawings, paint to match building or color(s) as selected by Architect. Provide hinges, latches, draw bolts, cane bolts and embedded items as required.

END OF SECTION

**SECTION 05 70 00**

**ORNAMENTAL METALS**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide all ornamental metal items, complete as indicated, specified and required.

**A. Work In This Section:** Principal items include:

1. Railings, both stair and guardrails.
2. Canopies/awnings as detailed on drawings.
3. Ornamental items as indicated on drawings or required to complete any and all ornamental metal items complete.

**B. Related Work Not In This Section:**

1. Metal fabrications.
2. Structural supports to receive architectural metal items.
3. Sheet metal.
4. Painting or metal finishes.
5. Louvers and vents.

1.02 QUALITY ASSURANCE:

**A. Qualification of Fabricator:** All Work of this Section shall be fabricated and installed by a specialist architectural metals fabricator, whose qualifications and experience are subject to Owner's review.

1.03 SUBMITTALS: Refer to Section 01 33 00 for procedures.

**A. Shop Drawings:** Showing complete details for all Work of this Section. Showing details of anchorage and attachments not indicated, all provisions for expansion and contraction control, preparation for Work of other trades, architectural metal installations conform to Code.

**B. Samples:** Submit minimum 24" square Samples, showing the finish and color(s) required along with connections and fasteners, plates including a connecting joint, finished as specified, and joint finished with sealant, and submit such other Samples Architect may request for his approval prior to fabrication.

**PART 2 - PRODUCTS**

- 2.01 STEEL SHAPES, TUBING, CABLES AND CLADDING PLATES: Conforming to ASTM A36, A500 and A501, metalized 20 gage minimum unless otherwise specified and as required to meet building code requirements, temper best suited for the purpose. Finish as scheduled on drawings or as selected by Architect. Size and shape as indicated, thickness as required and approved by Architect.
- 2.02 ALUMINUM STEEL, TUBING, SHAPES, CLADDING PLATES: Provide Type 6063-T52 and 6063-T832 aluminum alloy, finish as scheduled on drawings or as selected by Architect, temper best suited for the purpose, minimum 3/16" thickness unless otherwise indicated on drawings.
- 2.03 RAILINGS and HANDRAILS: Handrails for stairs and ramps shall be 1 ¼" to 1 ½" diameter (1 ½" nominal) and mounted 1 ½" minimum clear from side walls.
- A. Metalizing:** Provide zinc metalized "Galvalume" coatings on exposed metal elements; apply in accordance with applicator specifications and ASTM A792 for this factory process.
- 2.04 CUSTOM FABRICATED ITEMS: Fabricate as detailed on drawings of materials as indicated, provide shop drawings for Architects approval prior to fabrication.
- 2.05 FASTENERS: Where in connection with Steel, heat-treated aluminum or Type 316 non-magnetic stainless steel. Finish exposed fasteners to match the adjoining painting surfaces. Provide screw type fasteners. Do not place fasteners on exposed surfaces unless indicated on the Drawings or on approved Shop Drawings. Design connections to use concealed fasteners wherever feasible.
- 2.06 WELDING: Conform to AWS D1.1, as modified by referenced AISC Standards, and as indicated or noted on Drawings. Unless otherwise indicated or specified, weld joints by shielded electric-arc method. Grind exposed welds subject to contact smooth surfaces free of holes, slag, or other defects, flush with adjoining surfaces. No finishing treatment is required for permanently concealed welds and other exposed welds except as specified herein. Cut out defective welding with chisel or air arc and replace.
- A. Galvanizing / Metalizing Repair:** Wire brush welds and damaged coating to clean bright metal. Apply one coat of galvanizing repair paint where surfaces are concealed or are to be finish painted. Use the specified hot-applied galvanizing repair compound where surfaces remain exposed and unpainted.
- 2.08 SHOP PRIMING: Clean all exterior exposed steel in accordance with SSPC-SP6 Commercial Blast Clean. Apply Tnemec 90-97 Tnemec-Zinc (or approved equal) to all exterior exposed surfaces @ 2.5 to 3.5 mils DFT. 90-97 meets AISC slip coefficient requirements as a Class B rating. Clean all interior steel in accordance with SSPC-SP2 Hand Tool Clean and /or SSPC-SP3 Power Tool Clean. Apply Tnemec 10-99 Primer (or approved equal) to all interior steel surfaces @ 2.0 to 3.5 mils DFT.

2.09 PAINT FINISH: Refer to Section 09 91 00 or 05 90 00 for application procedures.

**PART 3 - EXECUTION**

3.01 INSPECTION: Refer to Section 01 45 00, Article "Verification of Conditions", and report to Architect in writing those conditions that prevent or interfere with correct installation of Work of this Section.

3.02 INSTALLATION: Install and connect materials according to drawings and approved submittals. Carefully erect materials and check for correct alignment before completing permanent connections. Tighten fasteners to firm pressure without over-stressing oil canning or distorting connected materials. After installing, caulk all exposed joints in accordance with Section 07 90 00 using sealant of color matching finish color. Remove defaced or damaged items and provide sound proper replacements as directed and approved, at no extra cost to Owner.

3.03 ISOLATION: Isolate all dissimilar metals and materials other than non-magnetic stainless steel. Conceal all isolation in finished Work.

3.04 CLEANING: Upon completion, clean and polish all surfaces and leave ready for service.

END OF SECTION

**SECTION 05 90 00**

**METAL FINISHES**

**PART 1 - GENERAL**

- 1.01 **DESCRIPTION:** Division 1 applies to this Section. This Section covers technical requirements for shop-applied fluorocarbon paint finish, and forms a part of all other Sections which require materials to be finished according to this Section.
- 1.02 **QUALITY ASSURANCE:** Use products of one manufacturer to produce uniform quality, color, and finished appearance. Applicator(s) of paint finish shall be licensed by manufacturer. The Architect will return two pieces from each approved set of Master Samples to Contractor for production quality control.
- 1.03 **SUBMITTALS:** Refer to Section 01 33 00 for procedures.
- A. Color:** Architect will inform Contractor of the exact paint color required prior to submission of the Master Samples. Manufacturer's standard paint color may be used if acceptably matching the designated color, as determined by Architect.
- B. Master Samples:** Submit two sets of four identical Samples of paint finish, one set on minimum 12" squares of flat metal, one set on tubular sections at least 18" long. Submit as many sets of Samples as are required for approval.
- C. Samples under Other Sections:** Samples of the paint finish required for the Work under other Sections shall demonstrate exact match with approved Master Samples in all characteristics.
- D. Other Samples:** Submit such Samples as Architect may request.
- E. Product Data:** Submit approved paint manufacturer's Product Data covering paint materials, surface preparation, pretreatment or priming, application, handling, and repair and touch-up instructions.
- F. Certificates:** Submit certificate that paint system applicator(s) are currently licensed by the paint manufacturer. For each delivery of painted products to site, submit applicator's certificate that delivered products have been painted in accordance with this Section.
- 1.04 **PRODUCT DELIVERY, STORAGE AND HANDLING:** At all times, ship, store, and handle painted products by methods that prevent deterioration or damage. Conform to protection and packing requirements herein.

- 1.05 **WARRANTY:** Refer to Section 01 78 00. Furnish to the Owner a written warranty for 10 years covering the fluorocarbon paint finish against defects in material or application, including chalking, loosening, peeling, or color changes exceeding 5 NBS units during the warranty period.

## **PART 2 - PRODUCTS**

- 2.01 **FLUOROCARBON PAINT:** Factory mixed and containing a minimum 70% resin content of Atochem, formerly Pennwalt, "Kynar 500" polyvinylidene fluoride resin, "Duronar" by Pittsburg Paints, "Fluorpon" by Devoe Paint Division, Celanese Coatings Company, or equal.
- A. Primer:** Baking type epoxy primer manufactured for the approved paint system and furnished by the approved fluorocarbon paint manufacturer.
  - B. Touch-Up Paint:** Air-dry exterior quality acrylic enamel, or equal, furnished by the finish paint manufacturer, color and gloss to exactly match paint finish.
- 2.02 **PREPARATION FOR PAINTING:** Clean, degrease, and prepare all surfaces according to paint manufacturer's instructions, using methods that do not damage materials or leave deleterious residues. Comply with Aluminum Association Spec AA-C12 for aluminum, when applicable. Buff and polish exposed metal surfaces to remove all extrusion or fabrication marks which may show through completed paint finish.
- A. Pretreatment:** After buffing is completed, aluminum surfaces may be given a fine matte caustic etches pretreatment and rinse if standard with product manufacturer.
  - B. Preparation of Other Metals:** Sandblast uncoated ferrous metal to white surface free of mill scale, slag, or paint primer. Clean zinc or cadmium coated metal surfaces of grease, oil, and other deleterious substances.
- 2.03 **PAINT APPLICATION:** Apply complete paint system under dust-free temperature and humidity controlled paint booth conditions and thermally bake each coat at the temperature and for the duration directed by paint manufacturer. Electrostatic spray application is preferred. Use methods that minimize handling both during and after application.
- A. Priming:** Apply epoxy primer on exposed and concealed surfaces, except interior of tubular members. Exposed surfaces include interior parts of channel-shaped glazing stops, glazing rebates, and like accessible or visible surfaces. Apply primer to a minimum 0.0002 (0.005 mm) dry film thickness.
  - B. Finish Paint:** Apply on exposed surfaces and extend over concealed surfaces for a distance sufficient to assure complete continuity of coatings without visible skips, holidays, or thin edges, and so edges of finish paint are fully concealed by

calking sealant, glass setting materials, abutting finish materials or finish items, and like items. Fully coat surfaces visible through glass edges. Paint thickness on corners and edges shall equal that on flat surfaces. Apply finish paint to a minimum 0.0008 inch (0.020 mm) dry film thickness.

- C. Heat Sensitive Materials:** Apply an especially formulated low baking temperature and slow hardening exterior quality siliconized polyester paint exactly matching the finish paint and furnished or recommended by fluorocarbon paint manufacturer on plastic-cored aluminum panels and other materials that are damaged by normal high baking temperatures. Carefully control heat during paint baking operations to prevent damaging or distorting heat sensitive materials.

2.04 **PACKING AND SHIPPING PROTECTION:** Do not handle the painted products until paint finish is fully cured and hardened.

- A. Primary Protection:** Cover finish painted surfaces with a compatible stripable pressure-sensitive covering material of type that does not leave adhesive on the surface when removed, or enclose items with a polyethylene film wrapping secured with tape bands.
- B. Packing:** Secure bundled items with resilient separators, pads, and strong bands or tape, non-staining types that prevent chafing, gouging, excessive pressure at any point, or other damage. Ship the items in water-resistant sealed containers labeled as to contents and locations unless installed immediately.

### **PART 3 - EXECUTION**

- 3.01 **INSTALLATION OF PAINTED PRODUCTS:** Where possible, leave the primary protection in place until just prior to final cleaning, removing only those parts required for connections. Where painted products are jambs or heads of openings used for passage of materials or debris, install temporary boarding or flashing necessary to protect the painted surfaces. Immediately remove damaged Work that cannot be satisfactorily repaired and provide acceptable Work at no extra cost to Owner.
- 3.02 **TOUCH-UP AND REPAIR:** Subject to Architect's prior approval in each case, minor scratches and blemishes in paint finish may be repaired with specified touch-up paint. Smooth edges of defects and use air-brush and hot-air-gun technique, or equal. Produce virtually non-apparent repairs. If repairs are not acceptable, remove and replace involved Work as directed and as specified above for damaged Work.
- 3.02 **FINAL CLEANING:** Just prior to final inspection, remove protection and clean the painted surfaces. Use non-abrasive cleaning agents that are satisfactory to the paint manufacturer.

END OF SECTION

**SECTION 06 05 00**

**STRUCTURAL WOOD ITEMS**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide structural wood items complete as specified on drawings and required by Code.

**A. Work In This Section:** Principal items include:

1. Wood trusses.
2. PSL's.
3. LSL's.
4. LVL's.
5. Glued laminated wood.
6. All fasteners and accessories required for proper installation.

**B. Related Work Not In This Section:**

1. Sheet metal.
2. Calking and sealants.
3. Concrete.
4. Insulation.
5. Cabinets and casework items.
6. Furnishing of steel non-standard wood framing connectors.

1.02 SUBMITTALS: Refer to Structural Drawings for procedures.

1.03 QUALITY ASSURANCE: Refer to Structural Drawings.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING: Refer to Structural Drawings.

**PART 2 - PRODUCTS**

2.01 MATERIALS: Provide materials and accessories required for completion of work as indicated on drawings and required by Code and approved by the Structural Engineer.

2.02 ACCESSORIES: Provide all hardware, accessories and miscellaneous items for a complete installation.

**PART 3 - EXECUTION**

3.01 INSTALLATION: All rough carpentry work shall be properly installed in strict compliance with drawings and all Code requirements and approval by the Structural Engineer.

END OF SECTION

**SECTION 06 20 00**

**FINISH CARPENTRY**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide and perform finish carpentry complete as indicated, specified, and required.

**A. Work In This Section:** Principal items include:

1. Plastic laminated cabinets, casework and countertops.
2. Prefabricated cabinets and casework.
3. Wood wall shelving.
4. Wood trim, molding and base.
5. Back priming to extent specified.
6. Telephone and electrical backboards.
7. Installation of hollow metal doors and frames.
8. Installation of wood doors.
9. Installation of finish hardware except as otherwise specified.

**B. Related Work Not In This Section:**

1. Finish painting.
2. Furnishing hollow metal doors and frames.
3. Furnishing wood doors.
4. Furnishing finish hardware for doors.

1.02 QUALITY ASSURANCE: Work of this Section shall conform to the Manual of Millwork of the Woodwork Institute (WI), Current Edition, or Architectural Woodwork Institute, (AWI), Current Edition, and grades as specified herein or indicated. Prior to delivery to site, submit WI Certified Compliance Certificates indicating each millwork product for the Work and that all products will fully conform to the WI grades and other requirements shown and specified.

**A. High-Pressure Decorative Laminate:** NEMA LD 3, grades as indicated, or if not indicated, as required by woodwork quality standard.

1. Manufacturer: Subject to compliance with requirements, provide high-pressure decorative laminates by one of the following:
  - a. Formica Corporation.
  - b. Wilson Art.

1.03 SUBMITTALS: Refer to Section 01 33 00 for procedures.

**A. Shop Drawings:** Submit for following items, bearing the WI Certified

Compliance Grade Stamp.

1. Show locations of steel backing plate or wood blocking required for the anchoring of cabinets, casework, and other Work of this Section. This work to be done by others.
2. Plastic laminate countertops, each typical type.
3. Plastic laminate finished cabinets and casework, each typical type.
4. Prefabricated cabinets and casework, each typical type.

**B. Samples and Product Data:** Submit the following for selection and approval:

1. Adhesive: Provide Low VOC and Formaldehyde Free adhesives type for required installation.
2. Plastic laminate patterns and colors for selections.
3. Catalog data for each proposed cabinet hardware item.

**PART 2 - PRODUCTS**

2.01 **MATERIALS AND MANUFACTURER:** Refer to Drawings for product and finish selections. Use products of only one manufacture throughout for each specialty item specified unless otherwise noted or approved. Conforming to WI and AWI Manuals unless otherwise specified. Details on Drawings and requirements specified herein govern arrangement, sizes, construction, and fabrication. In all other respects, manufacture Work of this Section to conform to the WI grades specified. All cabinets, casework and hardware to be as scheduled on drawings.

**A. Plastic Laminate Countertops:** WI Section 16, "Custom" grade, all self-edged unless otherwise shown. Seal the edges of sink and plumbing trim cutouts with resin sealer. Make stops up to 12-foot length in one piece; for longer lengths, use not over two pieces, assembled with draw-bolts and splines, jointed flush and smooth as shown on approved Shop Drawings. Splices shall not occur across sink cutouts. Seal joints at splices with mastic. Provide non-drip rolled bullnose edges and rolled backsplash.

**B. Plastic Laminate Finished Cabinets and Casework:** Refer to Design drawings for selections. WI Manual "Custom" or better grade, or equal, with a high pressure plastic laminate for edge banding, white polyester overlay cabinet liner in cabinets and drawers. Low pressure decorative polyester or melamine overlay is not permitted for other uses.

**C. Cabinet Hardware:** Refer to drawings for hardware selections. Conforming to WI Supplement No. 1 to Section 14 and 15 except as modified herein, US26D finish except USP hinges for opaque paint finished items, plus related cabinet hardware as required for completely equipped installations, all of approved types. Include the following:

1. Hinges: Concealed (European Style) or pin hinges as selected by Architect.
2. Door and drawer pulls, wire pull US26D finish as selected and approved.
3. Magnetic catches except elbow catches for inactive leaf of locked pairs of doors.
4. Drawer guides, full extension type.
5. Adjustable shelf hardware as required.
6. Base adjusters with covers.
7. Door and drawer locks as indicated.
8. Door Silencers.

**D. Wood Wall Shelves:** Shelves of WI Section 5 "Melamine Faces" softwood or of Grade B-B Sanded plywood, all 3/4" thick, with edge banding.

**E. Molding, Trim and Bases:** Provide and install as detailed on drawings of paint grade MDF or pine finger joint or better-certified kiln dry, finish as selected by Owner, unless otherwise selected by Owner and/or Architect in writing. Exception: Pine finger jointed or better on windowsills.

**F. Fire Resistive Adhesives:** Low VOC and Formaldehyde Free adhesive. For lumber and wood veneer use Penacolite #G-1124 by Koppers or approved equal. For plastic laminates use Penacolite #G-1124-A/G-1131 by Koppers or approved equal. For countertop segment adhesive use rigid (urea, resorcinol) adhesive complying with WI Type II Water Resistant adhesive approved type for required installation.

**G. Back Priming:** Use exterior wood primer or enamel undercoater of type specified in Section 09 91 00, except use a tinted resin sealer on natural finished woodwork with care not to coat exposed surfaces. Back prime the following items:

1. Items so specified.
2. Wood, particleboard, or hardboard against plaster, concrete, or masonry.
3. Concealed surfaces of exterior wood opening frames.
4. All exterior wood trim.

2.02 CUSTOM CABINETS: Conforming to WI Premium Grade Standards.

### **PART 3 - EXECUTION**

3.01 INSTALLATION OF CABINETS AND CASEWORK: Perform by manufacturer's skilled and experienced mechanics according to the approved submittals, scribed to walls and adjoining surfaces, using first class workmanship throughout. All installation shall conform to Section 26 of the WI Manual of Millwork.

- A. **Fixed Cabinets:** Set base and wall cabinets level and straight. Securely fasten to walls or floors with fasteners and anchors as required and approved. Conform anchorages to Code.
- B. **Cabinet Hardware:** Fit and install cabinet hardware at the shop. After cabinets are in place, readjust each item and leave in correct working condition.

3.02 INSTALLATION OF FINISH CARPENTRY:

- A. **General:** Conform to Drawings, approved submittals, and Section 26 of the WI Manual. Repair all damage as approved.
- B. **Telephone and Electrical Backboards:** Install Grade B-B Exterior plywood panels, fire retardant treated 3/4" thick by 8-feet high. Secure to walls with stripes of contact adhesive and molly-bolts at 24" centers around perimeter of each panel. Run backboards from top of wall base.
- C. **Wood Work:** Provide woodwork in single lengths where possible. Make allowance for scribing by cutting on job. Cope or miter corners. Use waterproof glue for all gluing. Species as shown.

3.03 WOOD TIMBER ITEMS: Fabricate wood items as indicated on drawings and specified herein, using skilled craftsmen capable of producing first quality work. Wood shall be not more than 19% moisture content at time of fabrication.

3.04 INSTALLATION OF HOLLOW METAL WORK: Conform installation to submittals approved under Section 08 11 00 and manufacturer's instructions. Install all frames plumb, straight, in true alignment, rigidly connected to walls and building structure. Erect in proper sequence with other trades to prevent delays. Erect within the tolerances specified or shown in the approved submittals.

3.05 INSTALLATION OF FINISH HARDWARE: Install hardware supplied under Section 08 71 00, excluding only hardware specified to be installed at the factory or under other Sections. Drill pilot holes for screws and screw home; hammer driving of screws is not allowed. After installation and fitting, remove finish hardware items on surfaces to be painted, except prime coat items, repack in original containers, and perform final installation, testing, and adjustment after finish painting is completed. Adjust hinges to swing smoothly but not loosely, without sticking or hinge-bound conditions. Adjust other hardware for correct operation.

END OF SECTION

**SECTION 07 12 00****SELF ADHERED UNDERLAYMENT & FLASHINGS****PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide self adhered underlayment and flashing membrane complete as indicated, specified, and required.

**A. Work In This Section:** Principal items include:

1. Self adhered membrane on building walls, doors and window flashings and where indicated on drawings.
2. Flexible flashing panels to weatherproof penetrations complete in exterior walls and where indicated on drawings.

**B. Related Work Not In This Section:**

1. Masonry, lath and plaster, doors and windows.
2. Concrete or plywood substrates.
3. Roofing systems.
4. Membrane waterproofing.
5. Windows and doors.
6. Cement plaster.

1.02 QUALITY ASSURANCE:

**A. Qualifications of Applicator:** Employ skilled and experienced applicator for all Work of this Section.

1.03 SUBMITTALS: Refer to Section 01 33 00 for procedures.

**A. Product Data:** Submit manufacturer's specifications and installation directions, with typed specification sheet prepared specifically for conditions in the Work not covered by manufacturer's standard specifications.

**B. Samples:** Submit such Samples as Architect may request.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING: Deliver materials to site in original unbroken packages bearing manufacturer's label showing brand and weight. Store materials at site under cover and maintain in dry condition until ready for use. Store materials in accordance with manufacturer's recommendations.

1.05 JOB CONDITIONS: Apply pressure-sensitive masking tape to prevent staining of surfaces to remain exposed wherever membrane materials abut or lap on to other finish surfaces. Provide additional covering as necessary to supplement tape.

- 1.06 **WARRANTY:** Conform to Section 01 78 00. The contractor and the waterproofing manufacturer shall furnish to Owner a joint and separately written warranties against defects in materials or workmanship for up to 10 years, all systems are installed including Waterproofing specified in another Section by the same manufacturer, covering the waterproofing performance of the installed waterproofing systems for the fully warranty period. Defects covered under the warranty shall include, without limitation, loosening, softening, blistering, loss of either adhesion or cohesion, delamination, and penetration of moisture.

## **PART 2 - PRODUCTS**

### 2.01 MATERIALS:

- A. Manufacturers:** Vycor V-40, Vycor Ultra as manufactured by Grace Construction Products or Fortiflash or Protecto Wrap or approved equal.
- B. Door, Window and Wall Waterproof Flashing/Underlayment Membrane:** Vycor V-40, Vycor Ultra Fortiflash or Protecto Wrap or approved equal:
1. Prestrip: Moistop E-Z Seal.
  2. Corners: Moistop corner Shield.
  3. Self Adhering Membrane Flashing: Fortiflash.
  4. Sealant: Moistop Sealant.
- C. High Heat Conditions:** (SAMF-HH) Provide Grace “Vycor Ultra” or Carlisle WIP 300 HT under sheet metal flashings with slip sheet as recommended by manufacturer.
- D. Surface Primer:** Provide where required for proper installation, refer to manufacturer for recommendations.
- E. Mastic:** EM - A rubberized asphalt-based mastic or Schnee-Morehead SM 7108 Permathane (moisture-cured polyurethane).

### 2.02 FLASHING PANELS

- A. Quickflash Weatherproofing Products, Inc.,** (702) 614-6100 or approved equal. [www.quickflashproducts.com](http://www.quickflashproducts.com).
- B. Flashing Panels:** Quickflash Weatherproofing Flashing Panels to fit each required condition completely.
- C. Plumbing Flashing Panels:** Quickflash Plumbing Flashing Panels to fit each required condition completely.

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SOBOBA HORSESHOE VILLAGE – PHASE 2

SELF ADHERED UNDERLAYMENT  
AND FLASHINGS

San Jacinto, California

07 12 00 - 3

- D. Electrical Flashing Panels:** Quickflash Electrical Flashing Panels to fit each required condition completely.

**PART 3 - EXECUTION**

3.01 **APPLICATION:** Install per manufacturer's recommendations/specifications for all systems and the following requirements.

**A. Preparation:** Membrane must be placed directly on the solid backing and substrate over insulation. Suitable substrates include plywood, wood composition, wood planks or gypsum.

**B. Wall, Window or Door Preparation:**

1. Membrane must be placed directly on the structural material, apply in accordance with manufacturers specifications.
2. Refer to details on drawings for each type of application, if a discrepancy occurs, bring it to the Architects attention for resolution.

**C. Install flexible flashing panels** in accordance with manufacturer's instructions.

3.02 **CLEANING:** Clean all waterproofing materials from surfaces to remain exposed and restore the finish as required. If exposed surfaces are stained and cleaning is not acceptable, remove affected Work and provide new conforming Work as directed and approved, at no extra cost to Owner.

END OF SECTION

**SECTION 07 21 00**

**BUILDING INSULATION**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide building insulation complete as indicated, specified, and required.

**A. Work In This Section:** Principal items include:

1. Thermal batt insulation for exterior walls and under roof deck and above ceilings where indicated on drawings.

**B. Related Work Not In This Section:**

1. Sound insulation in interior partitions in Section 09 29 00.
2. Insulation for mechanical systems in Division 23.

1.02 SUBMITTALS: Refer to Section 01 33 00 for procedures. Submit insulation and prong anchor manufacturers' printed specifications and instructions.

**A. Recycled Content:** Certified by Scientific Certification Systems to contain minimum of 18 percent post-consumer and seven (7) percent pre-consumer recycled glass product, on average of manufacturer's products.

**PART 2 - PRODUCTS**

2.01 FORMALDEHYDE-FREE INSULATING MATERIALS:

**A. Thermal Batt Insulation:** Per ASTM C665, Type III, Class A labeled flame spread of 25 or less where exposed or required by Code the greater of, R-30 for roof in inaccessible areas and R-11 between floors and R-21 & R-15 in exterior walls depending on wall stud size, R-11 for party walls unless otherwise indicated in the Building Energy Analysis Report or required by Code, PSK facing batts with flanges for use under roof decks and friction-fit batts for use in studs and metal framing. Type II batts with kraft facing to be used in areas enclosed by incombustible finish materials provided such batts and usage are approved by Building Department.

**B. Staples:** Stainless steel, monel, or copper-coated steel, size directed by batt manufacturer.

**C. String Wires:** Minimum 18 gage galvanized steel wire.

**PART 3 - EXECUTION**

3.01 **INSTALLATION OF BATTS:** Install all batts with close fit, free of gaps, holes, or sagging. Maintain a nominal 3/4" air space between insulation and interior wall or ceiling finish material. Staple flanges at 4" centers and ensure batt facings form a continuous vapor barrier. Provide taut stretched string wires along the center of horizontal or sloping batts where support spacing exceeds 16" on centers.

- A. Wood Framing:** Provide friction-fit batts, tightly fitted to stud webs and wood furring.
- B. Roof Decks:** Install insulation secured with staple flanges together at 4" centers. Seal all stapled flanges and the joints at abutting vertical surfaces with pressure-sensitive plastic tape, forming a continuous vapor barrier. Provide 18 gage galvanized string wires under batts where necessary to prevent sagging, stretched taut.

3.02 **EMISSIONS CRITERIA:**

Product emissions are required to meet the following exposure concentration criteria at 168 hours with the exception of formaldehyde and the other CA chronic RELs. Formaldehyde and the other CA RELs criteria are required to be met at a time point no later than 336 hours. Data time points less than 336 hours must demonstrate that emissions have peaked before the compliance time point. For the 336 hour time point, the data is modeled for furniture utilizing the power-law model found in ANSI/BIFMA M7.1-2007; for all other product types the most appropriate emission calculation is made following Section 9.4.1 of ASTM D-5116-2006.

Individual VOCs <sup>1</sup>	≤1/100 TLV and ≤½ CA chronic REL
Formaldehyde <sup>2</sup>	≤0.0135 ppm/13.5 ppb
Total VOCs <sup>3</sup>	≤0.22 mg/m <sup>3</sup>
Total Aldehydes <sup>4</sup>	≤0.043 ppm/43 ppb
Total Phthalates <sup>5</sup>	≤0.01 mg/m <sup>3</sup>
Total Particles <sup>6</sup> (≤ 10µm)	≤0.02 mg/m <sup>3</sup>

END OF SECTION

**SECTION 07 42 00**

**PREFORMED METAL ROOFING**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide prefinished, preformed metal roofing complete as indicated, specified, and required.

**A. Work In This Section:** Principal items include:

1. Preformed, prefinished metal roofing.
2. Extruded vinyl weather seal.
3. Prefinished metal flashings and trim
4. Concealed fastenings and accessories as required.
5. Roofing underlayment.

**B. Related Work Not In This Section:**

1. Built-Up roofing system.
2. Rough carpentry.
3. Structural supports for roofing.

1.02 QUALITY ASSURANCE: Applicator shall be employed by preformed metal roof manufacturer or be approved by him and have a minimum of 5 years experience performing this type of work.

1.03 SUBMITTALS: Refer to Division 1 Documents.

**A. Shop Drawings:** Prior to fabrication, prepare and submit complete layout and details of construction, with installation and flashing details and manufacturers printed technical data covering all work under this Section.

**B. Samples:** Submit samples of proposed metal shapes, finish, fasteners and accessories.

1.04 PERFORMANCE REQUIREMENTS: Air infiltration shall be tested in accordance with ASTM E283. Infiltration shall not exceed 1.57 cfm per square foot ( $.003M^3/5M^2$ ) of fixed area. Water infiltration shall be tested in accordance with ASTM E331. No water penetration at a test pressure of 6.24 P.S.F. Deferred approvals are not allowed.

**A. Wind Loads:**

1. Design: Minimum design wind pressures, both positive and negative and acting normal to the plane of the wall, shall be per CBC, Exposure "C",

basic 110 M.P.H. wind speed, with a minimum of 20 psf at ground floor assemblies.

- 1.05 **MOCKUPS:** Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and qualities of materials and execution.
- A. Build mockups of each** roof eave, including fascia, at high and low roof corners, as shown on Drawings, approximately 48 inches square by I thickness, including insulation, attachments, and accessories.
  - B. Mockups may be assembled** and shown as part of the building in the field. Remove, replace, or make adjustments as directed by the Architect.
  - C. Approved mockups may** become part of the completed Work if undisturbed at time of Substantial Completion.
- 1.06 **PRE-INSTALLATION CONFERENCE:** Conduct conference at Project site to comply with requirements of Contract Documents. Review methods and procedures related to metal roof panel assemblies including, but not limited to following:
- A. Meet with Architect,** Owner's insurer if applicable, testing and inspecting agency representative, metal roof panel installer, metal roof panel manufacturer's representative, deck Installer, and installers whose work interfaces with or affects metal roof panels including Installers of roof accessories and roof-mounted equipment.
- 1.07 **PRODUCT DELIVERY AND HANDLING:** Protect materials from damage during shipping, handling and storage. Materials showing dents, scratches, deformations, rust or other defects will be rejected.
- 1.08 **JOB CONDITIONS:** Refer to Division 1 Documents. Verify field measurements, report major discrepancies between Drawings and field measurements to the Architect before fabrication and installation. Exercise caution to protect existing structure and roof underlayment.
- 1.09 **MANUFACTURER:** PAC-CLAD-TITE LOC PLUS STANDING SEAM or equal Berridge Manufacturing Company, (800) 231-8127 or AEP SPAN Co., (800) 527-2503, or approved equal.
- 1.10 **WARRANTY:** Refer to Division 1 Documents. Manufacturer/Contractor shall furnish to Owner a written warranty against defects of materials for a period of Five years from Date of Substantial Completion. Refer to Section 05 90 00 Metal Finishes for warranty requirements for the factory applied finishes.

## **PART 2 - PRODUCTS**

2.01 ROOFING SYSTEMS: The system is detailed using PAC-CLAD-TITE LOC PLUS STANDING SEAM, Standing-Seam Metal Roof Panels: Formed with vertical ribs at panel edges and flat pan between ribs; designed for sequential installation by mechanically attaching panels to supports using concealed clips located under one side of panels and engaging opposite edge of adjacent panels, and mechanically seaming panels together. The PAC-CLAD-TITE LOC PLUS STANDING SEAM or equal Berridge Standing Seam Panel System, system as indicated on Drawings and as specified herein. Panels with 16" on-center with approx. 2" high standing seam shall be factory formed while the panels system shall be site roll-formed in continuous lengths. Snap-on batten seams shall contain an extruded vinyl weather seal insert capable of preventing siphoning, flooding and air infiltration through the standing seam.

**A. The Pac-Clad-Tite Loc Plus Standing Seam System** is an architectural and structural panel with a nominal coverage of 16" and a approx. 2" high machine-seamed sidelap, which carries a UL-90 uplift rating and may be installed over open framing on low slopes. It may be roll-formed in site.

2.02 MATERIAL AND FINISH: Refer to Section 05 90 00 Metal Finishes for procedures. Roof panels shall be hot-dipped galvanized, 24 gauge steel conforming to ASTM A446 Grade C G90 coating per ASTM A525 or prefinished Galvalume coating per ASTM 792 AZ-55 as selected by Architect, with factory finish "Kynar 500" finish as specified in Section 05900. Color to be as scheduled on drawings or as selected by Architect, match approved sample in Architects office.

2.03 FLASHING: Exposed adjacent flashing shall be prefinished and preformed with the same material and finish as the roof panel. Gage to be heavy enough to minimize oil canning effect on fascias.

2.04 UNDERLAYMENT: Provide 2 layers of 15 lb. felt underlayment as detailed on drawings or provide Grace Ice and Water Shield Vycor Ultra, applied in accordance with manufacturers recommendations as approved by the Architect.

2.05 FASTENERS AND ACCESSORIES: Standard product of the metal roof panels and snow /ice guards where indicated or required, as approved by the Architect.

**A. Provide components required** for a complete metal roof panels assembly including trim, copings, fasciae, comer units, ridge closures, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal roof panels, unless otherwise indicated.

1. Closures: Provide closures at eaves and ridges, fabricated of same metal as metal roof panels.
2. Clips: Minimum .0336 thick, zinc-coated, steel panel clips designed to withstand negative-load requirements.

3. Cleats: Mechanically seamed cleats formed from minimum .0276 thick, zinc-coated steel sheet.
  4. Backing Plates: Provide metal backing plates at panel end splices, prefabricated from manufacturer with stainless steel studs.
  5. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked; minimum 1 inch thick, flexible closure strips, cut or premolded to match metal roof panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.
- B. Flashing and Trim:** Formed from 0.0276 inch (24 gauge) thick, unless otherwise indicated, zinc-coated (galvanized) steel sheet, prepainted with coil coating. Provide flashing and trim as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, comers, bases, framed openings, ridges, fasciae, and fillers. Finish flashing and trim with same finish system as adjacent metal roof panels.
- C. Pipe Flashings:** Premolded, EPDM pipe collar with flexible aluminum ring bonded to base and stainless steel pipe clamp to secure collar to pipe. Pipe penetration flashings to be supplied by the metal roof manufacturer and to be included with weathertightness warranty.

### **PART 3 - EXECUTION**

#### 3.01 INSTALLATION:

- A. Acceptance of Roof Decking:** Commencing installation by this Contractor will indicate that he has inspected the existing structure and accepts conditions as satisfactory as a base for the application of the work of this Section.
- B. Install** the work of the Section in accordance with approved shop drawings, and printed specification instructions of the metal roof manufacturer in relation to roofing (system) materials, fasteners and miscellaneous items required for proper installation.

3.02 ERECTION TOLERANCES: Installation Tolerances: Shim and align metal roof panel units within installed tolerance or 1/4 inch in 20 feet slope and location lines as indicated and within 1/8 inch offset of faces and of alignment of matching profiles.

#### 3.03 FIELD QUALITY CONTROL:

- A. Manufacturer's Field Service:** Engage a factory-authorized service representative to inspect during the installation of the metal roofing system and re-inspect completed metal roof panel installation, including accessories. Report results in writing. Remove and replace applications of metal roof panels where inspections indicate that they do not comply with specified requirements.

Additional inspections, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

- 3.04 **CLEANING AND PROTECTION:** Remove temporary protective coverings and shippable films, if any, as metal roof panels are installed, unless otherwise indicated manufacturer's written installation instructions. On completion of metal roof panel installation, clean finished surfaces as recommended by metal roof panel manufacturer. Maintain in a clean condition during construction. Replace metal roof panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION

**SECTION 07 54 00**

**TPO ROOFING**

**PART 1 - GENERAL**

1.01 SUMMARY

**A. Section Includes:**

1. Thermoplastic Polyolefin Single-Ply Roofing Membrane.
2. Thermoplastic Polyolefin Flashings.
3. Thermoplastic Polyolefin Accessories.

**B. Related Sections:**

1. Section 06 10 00: Rough Carpentry.
2. Section 07 60 00: Sheet Metal Flashing and Trim.
3. Section 22 00 00: Plumbing Specialties.

1.02 REFERENCES

**A. American Society for Testing and Materials (ASTM) - Annual Book of ASTM Standards.**

1. ASTM D-751 – Standard Test Methods for Coated Fabrics.
2. ASTM D-2137 - Standard Test Methods for Rubber Property—Brittleness Point of Flexible Polymers and Coated Fabrics.
3. ASTM E-96 - Standard Test Methods for Water Vapor Transmission of Materials.
4. ASTM D1204 - Standard Test Method for Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperature.
5. ASTM D-471 - Standard Test Method for Rubber Property—Effect of Liquids.
6. ASTM D-1149 - Standard Test Methods for Rubber Deterioration—Cracking in an Ozone Controlled Environment.
7. ASTM C-1549 - Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer.
8. ASTM C-1371 - Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers.
9. ASTM E 903 – Standard Test Method for Solar Absorptance, Reflectance, and Transmission of Materials Using Integrating Spheres.
10. ASTM G155 - Standard Practice For Operating Xenon Arc Light Apparatus For Exposure Of Non-Metallic Materials.

11. ASTM D573 - Standard Test Method For Rubber - Deterioration In An Air Oven.
- B. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual.**
- C. National Roofing Contractors Association (NRCA).**
- D. American Society of Civil Engineers (ASCE).**
- E. U.S. Green Building Council (USGBC): Leadership in Energy and Environmental Design (LEED).**
- F. Factory Mutual (FM Global) - Approval Guide.**
- G. Underwriters Laboratories (UL) - Roofing Systems and Materials Guide (TGFU R1306).**
- H. California Title 24 Energy Efficient Standards.**
- I. Energy Star.**
- J. Cool Roofing Rating Council (CRRC).**

#### 1.03 DEFINITIONS

- A. Roofing Terminology:** Refer to ASTM D1079 and the glossary of the National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual for definitions of roofing terms related to this section.

#### 1.04 SUBMITTALS

- A. Product Data:** Provide product data sheets for each type of product indicated in this section.
- B. Shop Drawings:** Provide manufacturers standard details and approved shop drawings for the roof system specified.
- C. Samples:** Provide samples of insulations, fasteners, membrane materials and accessories for verification of quality.
- D. Certificates:** Installer shall provide written documentation from the manufacturer of their authorization to install the roof system, and eligibility to obtain the warranty specified in this section.

1.05 QUALITY ASSURANCE

- A. **Manufacturer’s Qualifications:** GAF shall provide a roofing system that meets or exceeds all criteria listed in this section.
- B. **Installer’s Qualifications:** Installer shall be classified as a Master or Master Select™ contractor as defined and certified by GAF.
- C. **Source Limitations:** All components listed in this section shall be provided by a single manufacturer or approved by the primary roofing manufacturer.
- D. **Final Inspection:** Manufacturer’s representative shall provide a comprehensive final inspection after completion of the roof system. All application errors must be addressed and final punch list completed.

1.06 PRE-INSTALLATION CONFERENCE

- A. **Prior to scheduled commencement** of the roofing installation and associated work, conduct a meeting at the project site with the installer, architect, owner, GAF representative and any other persons directly involved with the performance of the work. The installer shall record conference discussions to include decisions and agreements reached (or disagreements), and furnish copies of recorded discussions to each attending party. The main purpose of this meeting is to review foreseeable methods and procedures related to roofing work.

1.07 PERFORMANCE REQUIREMENTS

- A. **Provide an installed roofing** membrane and base flashing system that does not permit the passage of water, and will withstand the design pressures calculated in accordance with the most current revision of ASCE 7.
- B. **GAF shall provide all** primary roofing materials that are physically and chemically compatible when installed in accordance with manufacturers current application requirements.

1.08 REGULATORY REQUIREMENTS

- A. **All work shall be performed** in a safe, professional manner, conforming to all federal, state and local codes.

1.09 DELIVERY, STORAGE AND HANDLING

- A. **Deliver all roofing materials** to the site in original containers, with factory seals intact. All products are to carry a GAF® label.

- B. Store all pail goods in** their original undamaged containers in a clean, dry location within their specified temperature range.
- C. Do not expose materials** to moisture in any form before, during, or after delivery to the site. Reject delivery of materials that show evidence of contact with moisture.
- D. Remove manufacturer supplied** plastic covers from materials provided with such. Use “breathable” type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Cover and protect materials at the end of each work day. Do not remove any protective tarpaulins until immediately before the material will be installed.
- E. Materials shall be stored** above 55°F (12.6°C) a minimum of 24 hours prior to application.

#### 1.10 PROJECT CONDITIONS

- A. Weather:**
  - 1. Proceed with roofing only when existing and forecasted weather conditions permit.
  - 2. Ambient temperatures must be above 45°F (7.2°C) when applying hot asphalt or water based adhesives.

#### 1.11 WARRANTY

- A. Provide Manufacturers standard EverGuard®** Diamond Pledge™ Guarantee with single source coverage and no monetary limitation where the manufacturer agrees to repair or replace components in the roofing system, which cause a leak due to a failure in materials or workmanship. Duration: Twenty (20) years from the date of completion.
  - 1. Materials and workmanship of listed products within this section when installed in accordance with current GAF application and specification requirements. Contact GAF Contractor Services for the full terms and conditions of the guarantee.

### **PART 2 - PRODUCTS**

#### 2.01 ACCEPTABLE MANUFACTURER:

- A. GAF®** - 1 Campus Drive, Parsippany, NJ 07054, or approved equal

## 2.02 MEMBRANE MATERIALS

- A. A fleece-backed, polyester scrim** reinforced thermoplastic polyolefin membrane with a nominal 0.060 inch (60 mil) thickness, for use as a single ply roofing membrane. Meets or exceeds the minimum requirements of ASTM D-6878. Each full roll contains approximately 1000 sq. ft. of roofing material, 10' X 100', weighing 344 lbs. Each half sheet roll contains approximately 500 sq. ft. of roofing material, 5' X 100', weighing 185 lbs. EverGuard® TPO 60 mil Fleece-Back Membrane thermoplastic single-ply roofing membrane by GAF. Colors shall be: White, unless otherwise selected by the Architect.

## 2.03 FLASHING MATERIALS

- A. A smooth type, polyester scrim** reinforced thermoplastic polyolefin membrane with a nominal 0.060 inch (60 mil) thickness, for use as a single ply roofing membrane. Meets or exceeds the minimum requirements of ASTM D-6878. UL Listed, FM Approved, Dade County Product Approval, Florida Building Code Approved. White membrane is Energy Star Listed, CRRC Listed and Title 24 Compliant. EverGuard® TPO 60 mil thermoplastic single-ply roofing membrane by GAF. Colors shall be: White, unless otherwise selected by the Architect.

2.04 MEMBRANE ADHESIVE: Two component fast-acting, low-rise polyurethane foam adhesive. The “A” and “B” components are dispensed from two pre-pressurized disposable cylinders. OlyBond500® Equipment Free Canister System distributed by GAF.

## 2.05 ADHESIVES, SEALANTS and PRIMERS

- A. Low VOC solvent-based Bonding Adhesive:** Solvent based rubberized adhesive for use with EverGuard TPO membranes, EverGuard® Low VOC Bonding Adhesive, by GAF. Available in 3 square or 6 square coverage rates.
- B. Low VOC solvent based primer** for preparing surfaces to receive butyl based adhesive tapes, EverGuard® TPO Low VOC Primer, by GAF.
- C. Low VOC TPO cleaner** designed to clean exposed or contaminated seams prior to heat welding to remove any residual soap or revitalize aged membranes. Contains only 50 grams per liter of Volatile Organic Content and has been formulated using a blend of primarily VOC-exempt ingredients to be in compliance with air quality regulations for single ply roofing products. EverGuard® CleanWeld® Cleaner by GAF®.
- D. One part butyl based high** viscosity sealant suitable for sealing between flashing membrane and substrate surface behind exposed termination bars and for sealing between roofing membrane and drain flange. EverGuard® Water Block, by GAF.

- E. One-part, moisture-cure**, self-leveling sealant designed for use in pitch pans on single ply roof systems. EverGuard® One-Part Pourable Sealant.

## 2.06 ACCESSORIES

### **A. Flashing Accessories:**

1. A smooth type, unreinforced thermoplastic polyolefin based membrane for use as an alternative flashing/reinforcing material for penetrations and corners. Required whenever preformed vent boots cannot be used, available in White, Tan, Gray, Regal Red, Regal Blue, and Hartford Green, 0.055 inches (55 mils) nominal thickness and sheet size: 24in x 50ft. EverGuard® TPO Detailing Membrane, by GAF.
2. An 8 inch (20 cm) wide smooth type, polyester scrim reinforced thermoplastic polyolefin membrane strip for use as a cover strip over coated metal and stripping-in coated metal flanges and general repairs: 0.045 inches (45 mils) nominal thickness with 100 foot length, available in White, Tan, Gray, Regal Red, Regal Blue, and Hartford Green EverGuard® TPO Flashing Membrane, by GAF.
3. Extruded aluminum termination bar with angled lip caulk receiver and lower leg bulb stiffener. Pre-punched slotted holes at 6” on center or 8” on center. ¾” x 10’ with 0.090” cross section, Drill-Tec™ Termination Bar, by GAF.
4. A 6 inch (14 cm) wide, smooth type, heat-weldable polyester scrim reinforced thermoplastic polyolefin membrane strip. Designed for use as a cover strip over non-coated metal edges and flanges. Each full roll contains approximately 100 Lineal Ft. of material, 6” X 100’. EverGuard® TPO Heat-Weld Cover Tape, by GAF.
5. .045” reinforced TPO membrane with pressure sensitive adhesive, to be installed on horizontal surfaces using plates and fasteners as a base attachment in fully adhered systems. Size 6” x 100’, EverGuard® RTA (Roof Transition Anchor) Strip™, by GAF
6. 24 gauge steel with 0.025” thick TPO based film as required for fabrication into metal gravel stop and drip edge profiles, metal base and curb flashings, sealant pans, and scupper sleeves. Standard sheet size 4’ x 10’, sheet weight 47 lbs. Custom sizes available, EverGuard® TPO Coated Metal, by GAF.
  - a) Available Stock Colors: White, Gray, Tan, Regal Red, Regal Blue, Hartford Green.
  - b) Available Pre-Formulated Colors: Colonial Red, Dark Brown, Dark Bronze, Desert Tan, Electric Blue, Goldenrod, Ivy Green, Moss Green, Patina Green, Slate Gray, Teal, Terra Cotta, Tropical Green, Smoke Gray, Energy Gray, Energy Tan.
  - c) Custom colors available.

**B. Wall & Curb Accessories:**

1. 55 mil TPO membrane and 24 gauge coated metal prefabricated into standard and custom size thru wall scuppers. Available in two sizes: 4" x 6" x 12" (l x w x d) with a 5.75" x 3.75" opening and 8" x 10" x 12" (l x w x d) with a 9.75" x 7.75" opening, EverGuard® TPO Scupper, by GAF
2. .045" thick reinforced TPO membrane fabricated corners. Available in four standard sizes to flash curbs. Four corners are required to flash the curb, EverGuard® Corner Curb Wraps, by GAF.
3. 0.045" thick molded TPO membrane outside corners of base and curb flashing. Hot-air welds directly to EverGuard TPO membrane. Size 4" x 4" with 6" flange, EverGuard® TPO Universal Corners by GAF.
4. 0.055" molded TPO membrane inside corners of base and curb flashing. Hot-air welds directly to EverGuard TPO membrane. Size 6" x 6" x 5.5" high EverGuard® TPO Preformed Corners by GAF.
5. 8" diameter, nominal .050" vacuum formed unreinforced TPO membrane for use in flashing outside corners of base and curb flashings, EverGuard® TPO Fluted Corner, by GAF.

**C. Penetration Accessories:**

1. 0.075" thick molded TPO membrane sized to accommodate most common pipe and conduits, (1" to 6" diameter pipes), including square tube. Hot-air welded directly to EverGuard TPO membrane, supplied with stainless steel clamping rings, EverGuard® TPO Preformed Vent Boots by GAF.
2. 0.045" thick molded TPO membrane preformed boots are split to accommodate most common pipes and conduits and available in three standard sizes, EverGuard® TPO Split Pipe Boots, by GAF.
3. 0.045" thick molded TPO membrane preformed square boots are split to accommodate most common square penetrations and conduits and available in three standard sizes, EverGuard® TPO Square Tube Wraps, by GAF.
4. .070 thick molded penetration pocket to provide structure and foundation for the application of a pourable sealant for a variety of roof penetrations, weldable and 9" x 6" x 4" (l x w x h). EverGuard® TPO Pourable Sealer Pocket
5. Constructed from spun aluminum and preflashed using .055" thick smooth type, unreinforced thermoplastic polyolefin membrane. Available in a wide range of sizes to allow a proper fit into any size roofing drain. EverGuard® TPO Drain by GAF
6. Aluminum drain unit coated with a weldable TPO compound. TPO membrane can be heat welded directly to the drain body, resulting in a strong, secure installation. Each drain is fitted with a BlueSeal® mechanical drain seal for a secure, tight seal into the building drain system. Available in two sizes (3" and 4"), and custom sizes are available. EverGuard® TPO Coated Metal Drain by GAF®

**D. Roof Edge Accessories:**

1. Coping system with pre-punched holes and snap-on design. Contains a metal clip that functions as a gutter to help channel water back onto the roof. Available for wall sizes 4” to 32”. M-Weld™ Snap-On Coping (contains 20 gauge clip) or M-Weld™ Snap-On Coping Plus (contains 16 gauge clip) by GAF®.
2. Three piece fascia system with continuous galvanized steel spring cant, exterior decorative snap-on fascia and available in 10 foot lengths in standard or custom colors, EverGuard® Snap-on Fascia by GAF®.
3. Two piece fascia system with rigid terminator base plate and exterior decorative fascia cover available in 10 foot lengths in standard or custom colors for use with 45 mil and 60 mil only, EverGuard® EZ Fascia by GAF®.
4. Two piece fascia system with rigid extruded terminator base plate and exterior decorative snap-on fascia cover available in 10 foot lengths in standard or custom colors, EverGuard® EZ Fascia EX by GAF®.
5. Colors and /or Custom: The Architect shall select the colors to be use, unless otherwise indicated on the Drawings.

**E. Field Of Roof Accessories:**

1. Pre-manufactured expansion joint covers used to bridge expansion joint openings in a roof structure. Fabricated to accommodate all roof to wall and roof to roof applications, made of .060” reinforced TPO membrane, available in 5 standard sizes for expansion joint openings up to 8” wide. EverGuard® TPO Expansion Joint Covers, by GAF
2. .055” thick smooth type, unreinforced thermoplastic polyolefin membrane designed for use as a conforming membrane seal over T-joints in 60 and 80 mil membrane applications. EverGuard® T-Joint Patches, by GAF.
3. 1/8” thick extruded and embossed TPO roll 34” x 50’, heat welds directly to roofing membrane. Unique herringbone traction surface. Available in gray or yellow, EverGuard® TPO Walkway Rolls, GAF.

**PART 3 - EXECUTION**

- 3.01 EXAMINATION: Verify that the surfaces and site conditions are ready to receive work. Verify that the deck is supported and secured. Verify that the deck is clean and smooth, free of depressions, waves, or projections, and properly sloped to drains, valleys, eaves, scuppers or gutters. Verify that the deck surfaces are dry and free of ice or snow. Verify that all roof openings or penetrations through the roof are solidly set, and that all flashings are tapered.

### 3.02 SUBSTRATE PREPARATION

#### A. Plywood Deck:

1. Plywood sheathing must be exterior grade, minimum 4 ply, and not less than 15/32" thick. Preservatives or fire retardants used to treat the decking must be compatible with roofing materials.
2. The deck must be installed over joists that are spaced 24" o.c. or less. The deck must be installed so that all four sides of each panel bear on and are secured to joist and cross blocking. "H" clips are not acceptable. Panels must be installed with a 1/8" to 1/4" gap between panels and must match vertically at joints to within 1/8". Decking should be kept dry and roofed promptly after installation.

### 3.03 INSTALLATION - GENERAL

- A. **Install GAF's EverGuard®** TPO roofing system according to all current application requirements in addition to those listed in this section.
- B. **GAF EverGuard®** TPO Specification # TFANN60FB.
- C. **Start the application of membrane** plies at the low point of the roof or at the drains, so that the flow of water is over or parallel to, but never against the laps.

### 3.04 MEMBRANE APPLICATION

#### A. Adhered:

1. Place membrane so that wrinkles and buckles are not formed. Any wrinkles or buckles must be removed from the sheet prior to permanent attachment. Roof membrane shall be fully adhered immediately after it is rolled out, followed by welding to adjacent sheets.
2. Overlap roof membrane a minimum of 3" (15 cm) for side laps and 3" (15 cm) for end laps.
3. Install membrane so that the side laps run across the roof slope lapped towards drainage points.
4. All exposed sheet corners shall be rounded a minimum of 1".
5. Use full width rolls in the field and perimeter region of roof.
6. Use appropriate bonding adhesive for substrate surface, applied with a solvent-resistant roller, brush or squeegee.
7. Apply OlyBond500® Equipment Free Canister System in a "spatter pattern" onto the substrate by dispensing the adhesive in a spray pattern similar to the action required when hand watering a flower bed, with a 50% substrate coverage rate.
8. Prevent seam contamination by keeping the adhesive application a few inches back from the seam area.

9. Adhere approximately one half of the membrane sheet at a time. One half of the sheet's length shall be folded back in turn to allow for adhesive application. Lay membrane into adhesive once the bonding adhesive is tacky to the touch.
10. Roll membrane with a weighted roller to ensure complete bonding between adhesive and membrane.
11. Membrane laps shall be heat-welded together. All welds shall be continuous, without voids or partial welds. Welds shall be free of burns and scorch marks.
12. Weld shall be a minimum of 1-1/2" in width for automatic machine welding and a minimum 2" in width for hand welding.
13. All cut edges of reinforced membrane must be sealed with EverGuard® TPO Cut Edge Sealant.
14. Supplemental membrane attachment is required at the base of all walls and curbs, and where the angle of the substrate changes by more than five (5) degrees (1" in 12"). Roofing membrane shall be secured to the structural deck with appropriate Drill-Tec™ screws and plates spaced every 12" o.c. The screws and plates must be installed no less than 1/2" from the membrane edge. Alternatively, the roofing membrane may be turned up the vertical plane a minimum of 3" and secured with screws and termination bar. Fastener spacing is the same as is used for in-lap attachment. The termination bar must be installed within 1-1/2" to 2" of the plane of the roof membrane, with a minimum of 1" of membrane extending above the termination bar.
15. Supplemental membrane attachment to the structural deck is required at all penetrations unless the insulation substrate is fully adhered to the deck. Roofing membrane shall be secured to the deck with appropriate Drill-Tec™ screws and plates.
16. Fasteners must be installed to achieve the proper embedment depth. Install fasteners without lean or tilt.
17. Install fasteners so that the plate or termination bar is drawn down tightly to the membrane surface. Properly installed fasteners will not allow the plate or termination bar to move (underdriving), but will not cause wrinkling of the membrane (overdriving).

### 3.05 FLASHINGS

#### A. General:

1. All penetrations must be at least 24" (61 cm) from curbs, walls, and edges to provide adequate space for proper flashing.
2. Flash all perimeter, curb, and penetration conditions with coated metal, membrane flashing, and flashing accessories as appropriate to the site condition.
3. All coated metal and membrane flashing corners shall be reinforced with preformed corners or non-reinforced membrane.

4. Hot-air weld all flashing membranes, accessories, and coated metal. A minimum 2” wide (hand welder) weld or minimum 1 - 1/2” automatic machine weld is required.
5. All cut edges of reinforced membrane must be sealed with EverGuard® TPO Cut Edge Sealant.
6. Consult the EverGuard® Application and Specifications Manual or GAF Contractor Services for more information on specific construction details, or those not addressed in this section.

**B. Coated Metal Flashings:**

1. Coated metal flashings shall be formed in accordance with current EverGuard construction details and SMACNA guidelines.
2. Coated metal sections used for roof edging, base flashing and coping shall be butted together with a ¼” gap to allow for expansion and contraction. Hot-air weld a 6” wide reinforced membrane flashing strip to both sides of the joint, with approximately 1” on either side of the joint left un-welded to allow for expansion and contraction. 2” wide aluminum tape can be installed over the joint as a bond-breaker, to prevent welding in this area.
3. Coated metal used for sealant pans, scupper inserts, corners of roof edging, base flashing and coping shall be overlapped or provided with separate metal pieces to create a continuous flange condition, and pop-riveted securely. Hot-air weld a 6” wide reinforced membrane flashing strip over all seams that will not be sealed during subsequent flashing installation.
4. Provide a ½” hem for all exposed metal edges to provide corrosion protection and edge reinforcement for improved durability.
5. Provide a ½” hem for all metal flange edges whenever possible to prevent wearing of the roofing and flashing membranes at the flange edge.
6. Coated metal flashings shall be nailed to treated wood nailers or otherwise mechanically attached to the roof deck, wall or curb substrates, in accordance with construction detail requirements.

**C. Reinforced Membrane Flashings:**

1. The thickness of the flashing membrane shall be the same as the thickness of the roofing membrane.
2. Membrane flashing may either be installed loose or fully adhered to the substrate surface in accordance with “Construction Detail Requirements”.
3. Where flashings are to be fully adhered, apply bonding adhesive at a rate resulting in 60 square feet/gallon of finished roofing material for solvent-based bonding adhesives, and at a rate of 125 square feet/gallon of finished roofing material for water-borne bonding adhesive. Apply bonding adhesive to both the underside of the membrane and the substrate surface at 120 square feet per gallon (Solvent Based) and 250 square feet per gallon (Water Based). A greater quantity of bonding adhesive may be

required based upon the substrate surface condition. The bonding adhesive must be allowed to dry until tacky to the touch before flashing membrane application.

4. Apply the adhesive only when outside temperature is above 40°F. Recommended minimum application temperature is 50°F to allow for easier adhesive application.
5. The membrane flashing shall be carefully positioned prior to application to avoid wrinkles and buckles.

**D. Un-Reinforced Membrane Flashings:**

1. Un-reinforced membrane is used to field-fabricate penetration or reinforcement flashings in locations where preformed corners and pipe boots cannot be properly installed.
2. Penetration flashings constructed of un-reinforced membrane are typically installed in two sections, a horizontal piece that extends onto the roofing membrane and a vertical piece that extends up the penetration. The two pieces are overlapped and hot-air welded together.
3. The un-reinforced membrane flashing shall be adhered to the penetration surface. Apply bonding adhesive at a rate resulting in 60 square feet/gallon of finished roofing material for solvent-based bonding adhesives, and at a rate of 125 square feet/gallon of finished roofing material for water-borne bonding adhesive. Apply bonding adhesive to both the underside of the membrane and the substrate surface at 120 square feet per gallon (Solvent Based) and 250 square feet per gallon (Water Based). A greater quantity of bonding adhesive may be required based upon the substrate surface condition. The bonding adhesive must be allowed to dry until tacky to the touch before flashing membrane application.

**E. Roof Edges:**

1. Roof edge flashings are applicable for gravel stop and drip edge conditions as well as for exterior edges of parapet walls.
2. Flash roof edges with metal flanges nailed 4” O.C. to pressure-treated wood nailers. Where required, hot-air weld roof membrane to coated metal flanges.
3. When the fascia width exceeds 4”, coated metal roof edging must be attached with a continuous cleat to secure the lower fascia edge. The cleat must be secured to the building no less than 12” O.C.
4. Alternatively, roof edges may be flashed with a 2-piece snap on fascia system, adhering the roof membrane to a metal cant and face nailing the membrane 8” on center prior to installing a snap-on fascia.
5. Flash roof edge scuppers with a coated metal insert that is mechanically attached to the roof edge and integrated as a part of the metal edging.

**F. Parapet and Building Walls:**

1. Flash walls with EverGuard TPO membrane adhered to the substrate with bonding adhesive, loose applied (Less than 24” in height) or with coated metal flashing nailed 4” on center to pressure-treated wood nailers.
2. Secure membrane flashing at the top edge with a termination bar. Water Block shall be applied between the wall surface and membrane flashing underneath all exposed termination bars. Exposed termination bars shall be mechanically fastened 8” on center; termination bars that are counter flashed shall be fastened 12” on center.
3. Roof membrane must be mechanically attached along the base of walls with screws and plates (deck securement) or screws and inverted termination bar (wall securement) at the following rate:  
Adhered Systems      12” on center
4. All coated metal wall flashings and loose applied membrane flashings must be provided with separate metal counterflashing, or metal copings.
5. Metal counterflashing may be optional with fully adhered flashings depending on guarantee requirements. Exposed termination bars must be sealed with FlexSeal® roofing cement or FlexSeal® caulk grade.
6. Flash wall scuppers with a coated metal insert that is mechanically attached to the wall and integrated as part of the wall flashing.

**G. Curbs and Ducts:**

1. Flash curbs and ducts with EverGuard TPO membrane adhered to the curb substrate with bonding adhesive, loose applied (Less than 18” in height) or with coated metal flashing nailed 4” on center to pressure-treated wood nailers.
2. Secure membrane flashing at the top edge with a termination bar. Water Block shall be applied between the curb/duct surface and membrane flashing underneath all termination bars. Exposed termination bars shall be mechanically fastened every 8” o.c.; termination bars that are counter flashed shall be fastened 12” on center.
3. Roof membrane must be mechanically attached along the base of walls with screws and plates (deck securement) or screws and inverted termination bar (wall securement) at the following rate:  
Adhered Systems      12” on center
4. All coated metal curb flashings and loose applied membrane flashings must be provided with separate metal counterflashing, or metal copings.
5. Metal counterflashing may be optional with fully adhered flashings depending on guarantee requirements. Exposed termination bars must be sealed with FlexSeal® roofing cement or FlexSeal® caulk grade.

**H. Roof Drains:**

1. Roof drains must be fitted with compression type clamping rings and strainer baskets. Original-type cast iron and aluminum drains, as well as retrofit-type cast iron, aluminum or molded plastic drains are acceptable.
2. Roof drains must be provided with a minimum 36" x 36" sump. Slope of tapered insulation within the sump shall not exceed 4" in 12".
3. Extend the roofing membrane over the drain opening. Locate the drain and cut a hole in the roofing membrane directly over the drain opening. Provide a 1/2" of membrane flap extending past the drain flange into the drain opening. Punch holes through the roofing membrane at drain bolt locations.
4. For cast iron and aluminum drains, the roofing membrane must be set in a full bed of water block on the drain flange prior to securement with the compression clamping ring. Typical water block application is one 10.5 ounce cartridge per drain.
5. Lap seams shall not be located within the sump area. Where lap seams will be located within the sump area, a separate roof membrane drain flashing a minimum of 12" larger than the sump area must be installed. The roof membrane shall be mechanically attached 12" on center around the drain with screws and plates. The separate roof drain flashing shall be heat welded to the roof membrane beyond the screws and plates, extended over the drain flange, and secured as above.
6. Tighten the drain compression ring in place.

3.06 TRAFFIC PROTECTION

- A. **Install walkway rolls** at all roof access locations and other designated locations including roof-mounted equipment work locations and areas of repeated rooftop traffic.
- B. **Walkway pads must** be spaced 2" apart to allow for drainage between the pads.
- C. **Heat-weld walkway rolls** to the roof membrane surface continuously around the perimeter of the roll.
- D. **Walkway rolls** may be installed with TPO primer and 3" seam tape.
  1. Roll or brush the TPO primer on the back of the TPO pad along the edges and down the middle length of the pad.
  2. Clean and prime the roof membrane where the pad will be installed.
  3. Install tape to the back of the cleaned area of the pad and roll in with a silicone hand roller.
  4. Remove release paper and install the tapes pads directly onto the roof membrane. Roll pads to secure in place

- 3.07 ROOF PROTECTION: Protect all partially and fully completed roofing work from other trades until completion. Whenever possible, stage materials in such a manner that foot traffic is minimized over completed roof areas. When it is not possible to stage materials away from locations where partial or complete installation has taken place, temporary walkways and platforms shall be installed in order to protect all completed roof areas from traffic and point loading during the application process. Temporary tie-ins shall be installed at the end of each workday and removed prior to commencement of work the following day.
- 3.08 CLEAN-UP: All work areas are to be kept clean, clear and free of debris at all times. Do not allow trash, waste, or debris to collect on the roof. These items shall be removed from the roof on a daily basis. All tools and unused materials must be collected at the end of each workday and stored properly off of the finished roof surface and protected from exposure to the elements. Dispose of or recycle all trash and excess material in a manner conforming to current EPA regulations and local laws. Properly clean the finished roof surface after completion, and make sure the drains and gutters are not clogged. Clean and restore all damaged surfaces to their original condition.

END OF SECTION

**SECTION 07 60 00**

**SHEET METAL**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide sheet metal items complete as indicated, specified, and required.

**A. Work In This Section:** Principal items include:

1. Sheet metal flashings in connection with roofing.
2. Reglet and counterflashing assemblies.
3. Miscellaneous metal flashing and counterflashing as required, except where provided by mechanical and electrical trades.
4. Downspouts.
5. Beam to wall flashings.
6. Drip flashings.
7. Diverter.
8. Scuppers.
9. Coping caps.
10. Roof hatch with safety post.
11. Shop priming and field touch-up.
12. Calking.

**B. Related Work Not In This Section:**

1. Sheet metal in connection with Plumbing, Air Conditioning, and Electrical.
2. Metal accessories for drywall, lathing.
3. Finish painting.
4. Sleeves for embedded items.
5. Louvers and vents.

1.02 QUALITY ASSURANCE: Drawing details and requirements herein govern. Conform to the current "Architectural Sheet Metal Manual" published by Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA), 1611 North Kent Street, Arlington, VA 22209 for conditions not indicated or specified and for general fabrication of sheet metal items.

1.03 SUBMITTALS: Refer to Section 01 33 00 for procedures.

**A. Shop Drawings:** Submit for fabricated sheet metal showing details, methods of joining, anchoring and fastening, thicknesses and gages of metals, concealed reinforcement, expansion joint details, sections, and profiles.

- B. Samples and Product Data:** Submit Samples and data for materials or assemblies as Architect may request.

## **PART 2 - PRODUCTS**

### 2.01 BASIC MATERIALS:

Galvanized steel:	ASTM A525, coating G90, mill phosphatized for paint adhesion, 26 gage unless otherwise indicated or specified.
Aluminum:	T6065-T5 alloy, temper best suited for each purpose.
Lead:	ASTM B749, FSQQ-L-201 4 lbs. sheet lead
Solder:	ASTM B32, B284.
Solder flux:	Standard brand non-corrosive acid-base type.
Fasteners:	Zinc or cadmium coated steel or stainless steel.
Felt:	ASTM D226, 15-pound type.
Primer:	Approved brand of zinc-dust zinc-oxide primer per Section 09 91 00 with manufacturer's pretreatment materials.
Sealant:	Conforming to Section 07 90 00.

### 2.02 RELATED MATERIALS:

- A. Reglets and Counterflashings:** Cemco or approved equal flashing systems complete with unions and preformed corners of necessary types for particular locations, of 26 gage galvanized steel. Use single manufacturer's products throughout equivalent to Type CO at concrete, Type MA at masonry, Type ST at plaster, or Type SM, as required by Drawings and details.
- B. Roof Hatch with Safety Post:** Single leaf, Type L-20, unit having 12" high curb of minimum 14 gage galvanized steel with integral deck flange and integral cap flashing of the same metal and gage, welded corners, and insulated with 1" thick fiber glass rigid insulation; cover of 14 gage galvanized steel with minimum 3" beaded flange, neatly welded, insulated with 1" thick fiber glass rigid insulation; insulation covered with a 22 gage galvanized liner; complete with zinc-coated hardware including heavy pintle hinges, enclosed counterbalancing and hold-open mechanism, a snap latch with turn handles, padlock lugs inside and outside, and neoprene or equal draft seals. Provide 42" telescoping safety post extension. Provide standard products of Bilco, Dur-Red, Babcock-Davis, or equal.

- 2.03 GENERAL FABRICATION REQUIREMENTS: Fabricate to avoid distortion and overstress of fastenings due to expansion and contraction. Provide expansion joints where necessary in continuous runs of sheet metal, constructed watertight and spaced 30-feet apart maximum. Lock and solder corners and blind hem exposed edges. Make joints with 4" lap and solder unless otherwise shown or specified. Fill single lock seams with sealant where soldering is not feasible. Extend flanges 4" minimum onto roof and wall surfaces. Fabricate sheet metal items in nominal 8-foot lengths unless otherwise shown or specified.

- A. **Soldering:** Do soldering slowly, immediately after application of flux, seams showing evenly flowed solder. Clean and neutralize finished soldering.
  - B. **Shop Priming:** Clean completed items, apply pretreatment, and prime all exposed surfaces with specified primer.
- 2.04 FABRICATED ITEMS: Of 24 gage galvanized steel except as otherwise indicated or specified.
- A. **Coping Caps:** Corner units having maximum 18" long legs and joints locked and soldered watertight, intermediate joints at maximum 8-foot centers and equally spaced. Make intermediate joints of the flush butted type, edges spaced about 1/4" apart and centered over an 8" long backing plate of same profile and gage as the cap, set in a 1/2" wide bead of sealant. Secure both edges with 1-1/2" wide 20 gage galvanized steel cleats spaced at maximum 32" centers and locked into drip hem.
  - B. **Roof Flashings:** Provide welded seam 4 pound lead flashings. Field fabricated flashings shall also be welded.
  - C. **Drip Flashings:** Hemmed exposed edges, 1-piece lengths.
  - D. **Downspouts:** Fabricate downspouts as detailed on drawings in accordance with round 3" downspouts (SMACNA), downspouts tight and joints filled with sealant. Provide 1/4" mesh balloon strainers at all downspout outlets.
  - E. **Beam to Wall Flashings:** As detailed, of 20 gage galvanized, all joints locked and soldered, top edge beaded for stiffening.
  - F. **Deck Edge Trough:** As detailed, of 20 gage galvanized, all joints locked and soldered, top edge beaded for stiffening.
  - G. **Diverter:** Fabricate as detailed on drawings of 20 gage galvanized steel, all joints soldered. Install as detailed and in accordance with SMACNA requirements.
  - H. **Custom Fabricated Items:** Fabricate in accordance with SMACNA requirements for each item. Provide to Architect shop drawings for approval prior to fabrication. Fabricate from materials using the proper alloy, oz. and thickness to prevent oil canning or telegraphing of any concealed fastener. Finish shall be "Bare" mill as scheduled on drawings. Install in accordance with approved shop drawings.

**PART 3 - EXECUTION**

- 3.01 GENERAL INSTALLATION REQUIREMENTS: Install metal items as indicated, according to approved submittals, and as required to complete the Work. Securely fasten and assemble, and make watertight and weathertight. Back prime items with asphalt bitumen when in contact with concrete at grade.
- A. **Coordinate Sheet Metal Items** in connection with roofing for proper installation, and furnish in sufficient time to avoid delay in roofing construction. Install roofing sheet metal simultaneously with roofing.
  - B. **Calking:** Provide sealant calking as indicated and required to seal and complete Work of this Section. Conform to Section 07 90 00.
  - C. **Isolation:** Isolate sheet metal from contact with concrete or masonry with one layer of roofing felt or asphalt bitumen, except embedded items. Field preparation or cleaning of sheet metal items to receive paint or waterproofing products is unacceptable.
  - D. **Provide Corner Heel Flashings** for all flashings that intersect walls, columns, door jambs, etc. Heel flashings will be fabricated to weather board lap with adjacent flashing and or building paper felts. Heel flashings indicated on drawings are minimums and do not indicate all intersections variations but are intended to indicate intent.
  - E. **Hem all exposed** edges of flashings in accordance with SMACNA.
- 3.02 COMPLETION: Examine installed sheet metal, water test if necessary or directed, and correct damaged or defective items.

END OF SECTION

**SECTION 07 84 00**

**FIRESTOPPING**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide Firestopping and Smoke seals complete as indicated, specified, and required.

**A. Work In This Section:** Principal items include:

1. All openings in fire-rated floors and walls both empty and those accommodating penetrating items such as cables, conduits, pipes, ducts etc.
2. Head of wall openings between walls and connecting roof assemblies.

**B. Related Work Not In This Section:**

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.

1.02 QUALITY ASSURANCE: Firestopping materials shall conform to ratings as per ASTM E-814 (UL-1479). The ratings must be a minimum of one hour, but not less than the fire resistance rating of the assembly being penetrated. Fire tests shall be conducted with a minimum positive pressure differential of 0.03" of water column. Systems and materials and must be listed by one of the appropriate agency: UL, ICBO, State Fire Marshal as required.

1.03 SUBMITTALS: Refer to Section 01 33 00 for procedures.

**A. Product Data:** Within 35 calendar days after the Contractor has received the Owners notice to proceed, submit:

1. Materials list of items proposed to be provided under this Section.
2. Manufacturer's specifications, test data, and other data required to provide compliance with the specified requirements.
3. 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.

1.04 PRODUCT HANDLING: Protect the materials of this Section before, during and after installation, and protect the work and materials of all other trades. In the event of damage, immediately make replacements and repair to the approval of the Architect and at no additional cost to the Owner.

## **PART 2 - PRODUCTS**

### 2.01 FIRESTOPPING:

**A. Manufacturers:** Where firestopping or smoke seals are called for on the Drawings or as specified herein, provide materials manufactured by one (1) of the following manufacturers:

1. Specified Technologies, Inc.
2. Dow Corning Corp., (517)496-4000.
3. 3M Contractor Products, (800)328-1687.
4. USG, (800)964-4874.
5. Tremco, Trimstop, (800) 551-3949

**B. Materials:** All materials shall restrict the transmission of temperature as well as the passage of flame, smoke and water. Materials shall be tested under ASTM E-814 (UL 1479) and pass.

1. Firestop Mortar: Single component portland cement/fly ash mortar. Requiring no support or anchoring devices to pass water hose stream tests.
2. Firestop Sealant: Single component sealant, use gun grade for walls and overhead. Intumescent, endothermic sealant, caulk or mastic as required by Code for approval.
3. Backing Material: Mineral wool, 4 pcf thickness manufactured by USG or approved equal.
4. Firestop Sleeve: Fabricated sleeve, collar or boot used around plastic pipe and other penetrations in fire-rated walls.
5. Firestop Compound: Firestop compound as required by system for Code approval.
6. Metal Components: Provide metal components as required by system manufacturer to meet fire test requirements.
7. Firestop Wrap Strips: Use intumescent wrap strips as required for Code approval.
8. Firestop Pillow System: A moisture resistive sensitive bag containing semi-intumescent material.
9. FireMaster Duct Protection System: A encapsulated fireproof blanket system for up to a 2 hour UL rating.
10. Safing Insulation: UL approved, incombustible, by USG, Tremco, or equal, with Code approved galvanized steel closures, clips, and ties to secure insulation and conform to Code.

## **PART 3 - EXECUTION**

3.01 SURFACE CONDITIONS: 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.

KTGY  
SOBOBA HORSESHOE VILLAGE – PHASE 2  
San Jacinto, California

FIRESTOPPING  
07 84 00 - 3

- 3.02 PREPARATION: Prepare the surface in accordance with approved manufacturer's recommendations.
- 3.03 APPLICATION: Apply the approved system and product to the designated surfaces in strict accordance with the manufacturer's recommended application procedures meeting Code requirements and approved by Architect. Firestop systems and materials shall have no adverse effect on the overall fire-rating or structural integrity of the wall assembly.
- 3.04 SAFING INSULATION: Pack indicated voids and other voids as required by Code, and secure with metal closures, clips, and ties according to Code.

END OF SECTION

**SECTION 07 90 00**

**CALKING AND SEALANTS**

**PART 1 - GENERAL**

- 1.01 DESCRIPTION: Division 1 applies to this Section. This Section covers calking of openings and joints indicated, specified, and required to make the entire building weatherproof and watertight, covers calking requirements for the entire Work, and pertains to any Section requiring calking, unless specified otherwise. Provide where required paintable acrylic calking materials, refer to Section 09 91 00 Painting. Coordinate with Firestopping Section 07 84 00 for fire rated joint materials.
- 1.02 QUALITY ASSURANCE: Employ a specialist calking contractor having not less than 5 years experience in calking installations of size and complexity required for the Work. Prior to award of any subcontract for calking, submit qualifications and project history of the proposed Calking Subcontractor, including bid price information. If proposed Calking Subcontractor is not approved, provisions of the General Conditions will apply.
- 1.03 SUBMITTALS: Refer to Section 01 33 00 for procedures.
- A. Samples and Data:** Submit the following:
1. Samples of cured sealants showing full range of designated colors; obtain color instructions from Architect prior to submittal.
  2. Technical data by manufacturers of proposed materials.
  3. Material manufacturers' printed preparation and application instructions; when approved, furnish copies to other trades.
- 1.04 PRODUCT DELIVERY: Deliver calking and sealant materials in unopened factory labeled containers, each label bearing statement of conformance to standards specified for each material.
- 1.05 WARRANTY: Refer to Section 01 78 00. Furnish a written warranty against defects in materials for 5 years and defects in workmanship for 2 years, covering all loss of adhesion or cohesion, deterioration, color changes, leaking and other defects.

**PART 2 - PRODUCTS**

- 2.01 MANUFACTURERS: Provide sealants by Pecora Corporation or one of the following manufacturers; Dow Corning, Tremco, Sonneborn, General Electric and Johns Manville or approved equals. Obtain each type of joint sealant through one source from a single manufacturer. If sealants from separate manufacturers must be used and could come in contact with each other, provide written certification from every manufacturer involved that the sealants are compatible and will adhere to each other. The Contractor shall

coordinate with all other sections that calking and sealants come in contact with, such as Section 07 60 00, Section 07 12 00 and any other not listed herein.

- 2.02 **MATERIALS:** Furnish sealants meeting following in-service requirements: Normal curing schedules are acceptable; Non-staining, color fastness (resistance to color change), and durability when subjected to intense actinic (ultra-violet) radiation are required. Furnish the products of only one manufacturer unless otherwise approved, sealant colors as selected to match the adjoining surfaces; special colors may be required. Use sealants selected from the following types where required on drawings and as appropriate to the joint being sealed. The manufacturer shall confirm that the appropriate calking or sealant(s) are used for on each type application required.
- A. Type A Sealant:** Urexpam NR-200 Sealant, self-leveling or non-sag two-part urethane Type I, conforming to FS SS-T-00227 and ASTM D1850 as manufactured by Pecora or approved equal.
  - B. Type B Sealant:** Dyntrol II Sealant, three-part polyurethane sealant conforming to FS SS-T-00227 Type II, Class A as manufactured by Pecora or approved equal.
  - C. Type C Sealant:** Pecora 895 or 896 for door and window frames (all types) in stucco areas all conforming to FS TT-S-001543A and FS TT-S-00230C or approved equal.
  - D. Type D Sealant:** Dynatrol I-XL polyurethane conforming to FS TT-S-00230C, Type II, Class A by Pecora or approved equal.
  - E. Type E Sealant:** 898 Sanitary Silicone Sealant with mold inhibitors, as manufactured by Pecora or approved equal.
  - F. Type F Sealant:** Pecora AC-20 FTR Firestopping Systems by Pecora or Type 3-6548 Silicone RTV foam as manufactured by Dow Corning or RTV850 as manufactured by General Electric or Fire Resistive Joint Sealing System as manufactured by Trimco with backup of Cerablanket-FS backups, primers and bond breakers as manufactured by Johns Manville.
  - G. Type G Sealant:** Proglaze System, including silicone construction sealant, Polyslim Tape, Poly-Wej gasket, Aro-Shim spacer and CCN sponge, as manufactured by Trimco or approved equal.
  - H. Type H Sealant:** AC-20 FTR AIS-919 Acoustical and Insulation Latex Sealants by Pecora or approved equal.
  - I. Type I Sealant:** Pecora 895 or approved equal.
  - J. Type J Traffic Bearing Application:** Furnish multi-component self leveling, or non-sag, non-tracking sealant with Shore "A" Hardness range of 40 to 55 where

subject to foot or vehicular traffic, meeting requirements of ASTM 920-79 or Federal Specification TT-S-227E, "Sealing Compound, Elastomeric Type, Multi-Component".

1. Dynatred, by Pecora. [Shore A hardness of 40-45]
2. Dynaflex, by Pecora. [Shore A hardness of 50-55]

**K. Type K Window Flashing Sealant:** Furnish single-component, non-sag STPU hybrid sealant compatible with asphalt-impregnated window flashing paper and/or rubberized asphalt with polyethylene film (peel-n-stick) meeting requirements of ASTM C-920 or Federal Specification TT-S-230C.

1. Dynaflex SC, by Pecora
2. Sonolastic 150, by Sonneborn

**L. Sealant Primer:** Non-sagging sealant meeting requirements of ASTM C920-79. Sealant primer as recommended by sealant manufacturer.

**M. Joint Cleaner:** Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

**N. Joint Backing Material:** ASTM D1056 or ASTM D1565; round, closed cell polyethylene urethane or neoprene foam rod; oversized 30 to 50 percent larger than joint width; #92 Closed-Cell Polyethylene Backer Rod by Pecora.

**O. Bond Breaking:** Pressure sensitive tape as recommended by sealant manufacturer to suit application.

### **PART 3 - EXECUTION**

- 3.01 **INSPECTION:** Refer to Section 01 45 00. Inspect surfaces and joints to be calked. Report to Architect in writing all conditions that prevent correct preparation, priming, and calking installation.
- 3.02 **TECHNICAL ASSISTANCE:** Furnish sealant manufacturer's technical field assistance as required to ensure proper use of sealants, preparation, and application.
- 3.03 **PREPARATION AND PROTECTION:** Conform to sealant manufacturer's instructions and apply materials to clean dry surfaces free of grease, oil, wax, or other matter that destroys or impairs adhesion. Remove lacquer and apply temporary masking tape on both sides of joints where surface staining may occur. Fill joints with joint backing material until the joint depth does not exceed 50% of joint width. Provide bond breaker to prevent bonding of sealant to backing material wherever joints exceed 1/2" width, or joint width is shown or required to exceed depth. Prime surfaces as required by manufacturer's instructions.

- 3.04 APPLICATION: Do not exceed 3/8" sealant depth unless specifically dimensioned. Minimum joint width is 1/8" for metal to metal joints and maximum 3/4" width elsewhere unless otherwise shown. Apply all sealant under sufficient pressure to fill voids. Finish exposed joints smooth and flush with adjoining surface unless recessed joints are shown. Remove temporary masking as soon as joint is completed.
- 3.05 SCHEDULE: Sealants shall conform to the following application schedule, unless the manufacturer requires another type of material.
- A. **Expansion and Control Joints in Masonry and Concrete.** - Type B.
  - B. **Expansion and Control Joints in Glass, Aluminum and Plastic.** - Type C.
  - C. **Expansion and Control Joints in Horizontal Traffic Surfaces.** - Type J
  - D. **Nonexpanding Joints in Concrete, Masonry, Aluminum, Steel and Wood:** - Type D
  - E. **Nonexpanding Joints in Glass and Plastic:** - Type C
  - F. **Around Plumbing Fixtures in Toilet and Bath:** - Type E
  - G. **Mechanical, Ductwork and Air Conditioning:** - Type D
  - H. **Acoustical Applications:** - Type H
  - I. **At Floor, Wall and Ceiling Penetrations Requiring Vibration Isolation, Sound or Fire Rating:** - Type F
  - J. **At Window Wall Where Channel Glazing is Required:** - Type I
  - K. **Cross Joints in all Copings:** - Type D
  - L. **Any Gypsum Board Joints and/or Settings:** - Type D
  - M. **For Sink, Tub or Bath Areas Including Countertop Joints:** - Type E
  - N. **Intersection of Wall Surface and Metal Cap Strip at Resilient Flooring Integral Cove Sealant:** - Type D
  - O. **Traffic Bearing Application:** - Types A or J
  - P. **Sealant at Doors, Windows and Penetrations in Other Material Application:** - Types C

**Q. Seal at back of window nailing flange to rough opening  
and at transition to window flashing material:** - Type K

3.06 CLEANING: Clean material from surfaces not to receive sealant and restore the finish as required. If surfaces adjoining joints are stained and cleaning is not acceptable, remove the affected Work and provide new Work as directed and approved, at no extra cost to Owner.

END OF SECTION

**SECTION 07 95 00**

**EXPANSION CONTROL**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide expansion and separation joint covering and filling units for building surfaces, complete.

**A. Work In This Section:** Principal items include:

1. Submittals.
2. Extruded aluminum building expansion and separation joint covering units.
3. Prefabricated extruded neoprene and aluminum joint seals.
4. Calking and sealants as required.

**B. Related Work Not In This Section:**

1. Flooring filler in floor joint covers where required.
2. Steel joint closures.
3. Sheet metal expansion control units.
4. Expansion and control joint screeds for plaster.
5. Finish painting.

1.02 QUALITY ASSURANCE: Requirements of Section 07 90 00 are a part of this Section including submittal and warranty requirements therein.

1.03 SUBMITTALS: Refer to Section 01 33 00 for procedures.

**A. Shop Drawings:** Submit showing details for all Work of this Section.

**B. Samples and Product Data:** Submit following listed Samples and such other Samples Architect may require, with copies of Code approvals and manufacturer's catalog and technical installation instructions for each material:

1. Each extruded aluminum joint cover unit, 12" long with specified finish.
2. Neoprene and aluminum seals, 12" long, with installation instructions including data for splicing and joining at angle and butt connections.
3. Cured sealant colors.

**C. Manufacturer's Letter:** Submit as specified in "Field Quality Control" herein.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING: Deliver products to the site in manufacturer's original intact labeled containers and store under cover in a dry location until installed. Factory protect and handle painted metal products.

- 1.05 **JOB CONDITIONS:** Coordinate installation with all related trades. Protect installed units until completion of entire work. Protect painted surfaces.

## **PART 2 - PRODUCTS**

- 2.01 **ALUMINUM EXPANSION AND SEPARATION JOINT COVERS:** Provide expansion covers by Balco Inc. (800) 767-0082, of the models, types as shown, are detailed on the Drawings and establish intended types and qualities, equivalent by or CS Group, Inc M & M System Corp are equals.

- A. Fire-Rated Floor and Wall Joint Covers:** Provide required fire-rated joint covers where shown or required by Code, that have been tested in accordance with UL-2079 by an accredited testing facility
- B. Types:** As indicated and conforming to following requirements.
1. Floor Joint Covers: Type as detailed with movements in the joints and joint assemblies allowing required differential horizontal and vertical movement.
  2. Wall and Ceiling Joint Covers: Types as detailed, similar to floor joint covers above and allowing required differential lateral and perpendicular movement with respect to face of wall or ceiling.
  3. Roof Joint Covers: Types as detailed on drawings, having a rigid sheet metal solid cover, rigid base units and flashing that caps over roofing flashings, and allows longitudinal, vertical, and horizontal differential joint movement. Provide integral raised curb type base units that receive and cap the tile roofing flashings where shown or required.
  4. Angle Type Joint Covers: Type as detailed having a rigid extruded aluminum angled top cover secured in an extruded aluminum base unit fastened to wall and bearing on an extruded aluminum curb top base unit having weatherstripping and aluminum flashing that caps over built-up roofing base flashings. Provide vertical joint covers of similar type and function. Provide integral or separate raised curb type base units that receive and cap built-up roofing base flashings where shown or required.
  5. Gutters: Provide reinforced EPDM gutters for all floor, wall, and roof joint covers, all joints vulcanized or cemented watertight, and provide vinyl drain tubes at each end of floor and roof joint cover runs or at low point of gutter; include complete details and all drain tubes showing discharge provisions and locations in Shop Drawings. Exterior vertical expansion joint applications shall employ a base boot to aid in discharge of any water intrusion through cover system.
- C. Accessories:** Provide necessary and related parts, devices, anchors, form clips, cements, and other items required for complete watertight installations.

- D. Aluminum Trims:** Provide trims shown in conjunction with joint covers and having the same finish.
- E. Finish:** Provide joint covers with following exposed finish, conforming to approved Samples:
  - 1. Floors and Walking Surfaces: Manufacturer's standard Mill aluminum finish.
  - 2. Exterior Walls, Roof applications are typically mill finish, and Exterior Horizontal Joints: Factory clear anodized finish conforming to AAMA recommendations, except where in walking surfaces.

## 2.02 MATERIALS

- A. Aluminum:** 60663-T5, 6061-T6 extrusions, 6061-T651 plate, 5052-H32 sheet.
- B. Water Barrier:** Flexible reinforced EPDM membrane, min 45 mils thick.
- C. Fire Barrier:** Provide type required for indicated fire resistance and fabricated of layers of high temperature insulation and metallic insulation. Fire Barriers to be supplied as an integral system with the Expansion covers if applicable by single source manufacture.
- D. Fireproofing:** Type required by fire rating, asbestos not acceptable.
- E. Centering Bars** are to allow full functionality of seismic covers

## **PART 3 - EXECUTION**

- 3.01 **INSPECTION:** Refer to Section 01 45 00, Article "Verification of Conditions", and report to Architect in writing those conditions that prevent or interfere with correct installation of Work of this Section.
- 3.02 **ALUMINUM JOINT COVER INSTALLATION:** According to approved submittals and the joint cover manufacturer's instructions, all angle, splice, and butt joints finished flush, clean, and fully waterproofed.
- 3.03 **SEISMIC SEAL INSTALLATION:** As shown and according to approved submittals and seal manufacturer's instructions. Clean and prepare contacting surfaces, apply primer and sealant as required, and install seals to produce waterproof installations.
- 3.04 **CALKING AND SEALANTS:** Provide supplemental calking and sealants where and required to make all Work of this Section fully waterproof in accordance with Section 07 90 00. Verify the physical and chemical compatibility of sealants to be used with compressible seals prior to installation.

- 3.05 FIELD QUALITY CONTROL: Contractor shall furnish services of a technical representative of the aluminum joint cover manufacturer at the site at the start of joint cover installation to assure proper assembly and installation of cover assemblies, to inspect installed covers at completion, and to issue a letter to Architect that states installed covers have been inspected and installations are correct and conform to cover manufacturer's recommendations and instructions or details all corrections required.

END OF SECTION

**SECTION 08 11 00**

**HOLLOW METAL**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide hollow metal items complete as indicated, specified, and required.

**A. Work In This Section:** Principal items include:

1. Hollow metal doors.
2. Hollow metal frames.

**B. Related Work Not In This Section:**

1. Installation of hollow metal doors and frames.
2. Furnishing finish hardware for hinged metal doors.
3. Glazing in hollow metal.
4. Grouting of hollow metal frames.
5. Sheet metal louvers in hollow metal transom openings.

1.02 QUALITY ASSURANCE:

**A. Requirements of Regulatory Agencies:** Construct labeled openings in accordance with SDI Standards and Specifications, ANSI/SDI-100 and manufacturer's standard procedures filed with and approved by UL. In accordance with NFPA provide required UL labels on doors and frames.

**B. Tolerances:** Provide hollow metal door and frame assemblies having maximum 3/32" gap between top and side edges of wider door face and frame after installation, and maximum 1/4" clearance above finish floor except as otherwise required by floor finish material; provide maximum 3/32" gap between door edges at meeting stiles of pairs of doors.

**C. Rejected Doors:** Furnish new doors conforming to requirements of this Section as replacements for doors rejected because of damaged surfaces, improper fitting or hardware preparation, or other cause, at no extra cost to Owner. Patching is not permitted for correction of defects.

1.03 SUBMITTALS: Refer to Section 01 33 00 for procedures.

**A. Shop Drawings:** If required by Owner and/or Architect submit Shop Drawings fully detailing materials, finishes, sizes, profiles, moldings, location of hardware items with reinforcement, and methods for anchoring, assembly and erection.

**B. Samples:** Submit following Samples if requested by Architect:

1. Frame corner construction.
2. Door panel and edge construction.
3. Door louvers.
4. Glazing stop corners.

**C. Product Data:** Submit if requested by Owner and/or Architect.

1. Submit certified test reports for Sound-rated doors.

1.04 **WARRANTY:** Refer to Section 01 78 00 for warranty form. Furnish to Owner a written warranty, subject to provisions of the Steel Door Institute for (1) one year.

**PART 2 - PRODUCTS**

2.01 **MANUFACTURE:** Use products of only one manufacture throughout for each specialty item specified unless otherwise noted or approved.

2.02 **MATERIALS:** As supplied by one of following manufacturers subject to conformance with requirements herein; refer to Section 01 60 00 for substitutions:

1. Republic Builders Products.
2. Amweld Metal Doors and Frames.
3. Ceco Door Products.
4. Steel craft Manufacturing Co.

**A. Types:** The sizes, types, thicknesses, profiles, details, and features indicated for doors and frames govern. In all other respects, provide doors and frames as standard with manufacturer except as specified herein. Where doors and frames are to be exterior type, provide galvanized steel in lieu of steel.

**B. Hollow Metal Doors:** Flush or raised panel seamless type as indicated on drawings, minimum 18 gage steel one-piece face panels, all parts welded and finished flush and smooth, finish smooth or embossed as selected by Architect. Reinforce face panels with internal welded stiffeners, or bond to a plastic-treated honeycomb core or a foamed plastic core except foamed plastic is not allowed for labeled doors. Fill hollow core doors with mineral wool material to eliminate all metallic ring. Insulated doors fabricated by Therma-tru Insulated Series foamed polyurethane core with an R-14.97 rating, U-0.067 rating and Sound-rate of 26. Provide flush top edges of exterior doors. Reinforce the top, bottom, and both edges according to manufacturer's standards. Finish both face panels and all edges smooth and free of seams and distortion. Provide 1-3/4" by 12 gage full-height astragal on active leaf of pairs of doors.

1. Glazed Lights In Doors: Manufacturer's standard steel assembly, one side integral with door and other side equipped with applied steel stops of minimum 20 gage steel, one piece lengths, secured within 3" of ends and at 9" centers with oval-head screws.
  2. Louvers: Manufacturer's standard inverted chevron steel type for interior doors, stormproof profile type with removable insect screens on interior side for exterior doors.
- C. Hollow Metal Frames:** Form the stops integral with frames. Reinforce heads over 42" wide with a full-length 12 gage channel. Provide frame anchors as required, not less than 3 anchors per jamb, except 4 anchors for openings over 7'-0" high. Provide galvanized steel plaster guards back of cutouts for hinges or mortised hardware on frames installed in concrete, masonry, or plaster. Fabricate frames of 14 gage or heavier gage steel if required by UL label requirements.
1. Exterior Frames: Fabricate exterior frames of minimum 16 gage steel, weld all joints, all exposed welds ground smooth and flush.
  2. Interior Frames: Fabricate interior frames of minimum 18 gage steel, weld all joints ground smooth and flush.
  3. Frames for Sound-Rated Wood Doors: Fabricate of minimum 16 gage steel, weld all joints, all exposed welds ground smooth and flush. Coordinate with and provide frames of correct size and stop placement for Sound-rated wood doors specified in Section 08 14 00.
- D. Hardware Preparation:** Prepare, reinforce, mortise, drill, and tap the doors and frames according to the templates supplied by the hardware supplier, reinforcing as standard with door and frame manufacturer except minimum 10 gage steel behind butts and 12 gage steel for mortised or surface-applied hardware. Conform to ANSI A115 Series as applicable to the hardware specified in Section 08 71 00 unless otherwise indicated.
- E. Finish:** Thoroughly clean all surfaces and chemically treat for paint adhesion. Paint inaccessible surfaces before assembling. Sand exposed surfaces of hollow metal and accessories and make smooth with mineral filler as required. Apply a baked-on coat of manufacturer's standard rust inhibitive primer, including all interior surfaces of door frames.

### **PART 3 - EXECUTION**

- 3.01 EXAMINATION: Examine supporting structure and conditions under which hollow metal is to be installed. Do not proceed with installation until unsatisfactory conditions have been corrected.

### 3.02 INSTALLATION

- A. Install hollow metal in accordance** with reviewed shop drawings and manufacturer's printed instructions. Securely fasten and anchor work in place without twists, warps, bulges or other unsatisfactory or defacing workmanship. Set hollow metal plumb, level, square to proper elevations, true to line and eye. Set clips and other anchors with Ramset "shot" anchors or drill in anchors as approved. Units and trim shall be fastened tightly together, with neat, uniform and tight joints.
- B. Placing Frames:** Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces and spreaders leaving surfaces smooth and undamaged. Install all frames plumb, straight, in true alignment, rigidly connected to walls and building structure. Erect in proper sequence with other trades to prevent delays. Erect within the tolerances specified or shown in the approved submittals.
- C. Place fire-rated frames** in accordance with NFPA Standard #80.
- D. Door Installation:** Fit hollow metal doors accurately in their respective frames, within following clearances: Jamb and head 3/32 inch, meeting edges pair of doors 1/8 inch, sill where no threshold 1/4 inch above finished floor. Place fire-rated doors with clearances as specified in NFPA Standard #80.

### 3.03 ADJUSTING AND CLEANING

- A. Prime Coat Touch-Up:** Immediately after installation, sand smooth rusted or damaged areas of prime coat and apply touch-up of compatible air-drying primer.
- B. Protection Removal:** Immediately before final inspection, remove protective wrappings from doors and frames.

END OF SECTION

**SECTION 08 14 00**

**WOOD DOORS AND FRAMES**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Furnish and deliver raised panel, flush panel type, fiberglass type and louver type wood doors complete as indicated, specified, and required.

**A. Work In This Section:** Principal items include:

1. Wood doors and frames.
2. Doors with Bi-pass siding/bi-folding hardware included.
3. Louvered doors.
4. Fiberglass french patio doors.
5. Installation of wood doors including hardware.

**B. Related Work Not In This Section:**

1. Installation of wood doors.
2. Hollow metal door frames.
3. Furnishing finish hardware for wood doors.
4. Glass and glazing.
5. Finish painting except for prefinished wood doors.

1.02 QUALITY ASSURANCE:

**A. Reference Standard:** Furnish doors conforming to National Wood Window and Door Association (NWWDA) and WI Standards for Hardwood Veneered Flush Doors unless otherwise required herein.

**B. Rejected Doors:** Furnish new doors conforming to requirements of this Section as replacements for doors rejected because of damaged surfaces, improper fitting or hardware preparation, or other cause, at no extra cost to Owner. Patching is not permitted for correction of defects.

**C. Fire-Rated Door Assemblies:** Where fire-rated door assemblies are indicated or required, provide fire-rated door and frame assemblies that comply with NFPA 80 "Standard for Fire Doors and Windows", and have been tested, listed and labeled in accordance with ASTM E152 "Standard Methods of Fire Test of Door Assemblies", by a nationally recognized independent testing and inspection agency acceptable to authorities having jurisdiction.

- D. Labeled Fire Doors and Frames:** Doors and Frames designated to be labeled shall bear the "Warnock Hersey International Inc." label. The Door and Frame supplier must be a Warnock Hersey authorized door and frame supplier. Rating of assembly shall be as listed in door schedule.

1.03 SUBMITTALS: Refer to Section 01 33 00 for procedures.

- A. Samples:** Submit Samples of the following unless waived by Architect.

1. Face veneer.
2. Door construction of veneer door.
3. Door construction and Shop finish of Pine or Fir louvered doors and glazed doors as detailed on drawings.
4. Finish for prefinished doors, conforming to Architect's prior instructions.

- B. Product Data:** Submit the following:

1. Manufacturer's specifications for all wood doors.

- C. Certificates:** Submit certificates by manufacturer that doors supplied conform to or exceed requirements of these Specifications.

1.04 WARRANTY: Refer to Section 01 78 00 for warranty form. Furnish to Owner a written warranty, subject to provisions of the WI and/or NWWDA "Standard Door Guarantee" except as modified herein, against defects in materials and workmanship for the following periods:

- |                                |              |
|--------------------------------|--------------|
| 1. Solid core panel doors -    | 2 years.     |
| 2. Hollow core doors -         | 1 year.      |
| 3. Solid core Exterior doors - | 1 year.      |
| 4. Interior doors -            | Life of door |

## **PART 2 - PRODUCTS**

2.01 MANUFACTURE: By one of the following manufacturers subject to conformance with requirements shown or specified. The door and frame are to be the Pre-Hung Type where required by the Architect; refer to Section 01 60 00 for substitution procedures:

Masonite Corporation  
JELD-WEN Door System  
Craft Master  
Marshfield Door Systems, Inc.

2.02 DOOR FRAMES: MDF, finger jointed, as selected by Architect for paint finish, kiln dried to a moisture content of 6-12% at time of fabrication.

- 2.03 **SOLID CORE WOOD DOORS:** Solid core, conforming to the above reference standard and to requirements herein either 5-ply or 7-ply for opaque paint finished doors, if prior approval is obtained from Architect.
- A. Core:** Staved glued low-density lumber core or solid particleboard core with minimum 28 pcf density conforming to Type I, Density C, Class I of CS 236, hot press resin bonded.
  - B. Edges:** Minimum total 1-1/16" wide top and bottom rails with minimum 1/2" thick hardwood edge banding, and minimum total 1-3/8" wide stiles with minimum 1/2" thick hardwood edge banding, 1-piece or laminated. Fully bond laminated edge strips together and to core before cross banding is applied. Provide vertical edge banding of species to match face veneers for transparent finished doors.
  - C. Crossbanding:** For 5-ply wood doors, minimum 1/16" thick hardwood, extending to four door edges. For 7-ply doors, two layers of minimum 1/16" thick hardwood extending to four edges of door, grain applied vertical and horizontal.
  - D. Face Veneer:** Of following type:
    - 1. Opaque paint finished interior doors - "Sound" grade birch, refer to schedule on drawings for selections or approved equal. Hardboard face veneer is acceptable where indicated on drawings.
    - 2. Transparent finished doors - "Premium Grade" species as indicated on drawings or as selected by Architect, balanced and free of heart.
  - E. Adhesives:** For interior doors, Type I or II for cores, crossbanding, and face veneers. For exterior doors, Type I for cores, crossbanding, and face veneers.
- 2.04 **LABELED SOLID CORE WOOD DOORS:** Face veneers as specified above, conforming to UL re-examination label requirements for the rating scheduled, bearing required UL label on hinge stile.
- 2.05 **HOLLOW CORE DOORS:** Same as solid core doors "Flush Slab or Raised Panel" manufactured by Masonite or Craft Master including face veneers and edges, except hollow core construction of manufacturer's grade; include a horizontal rail near mid-height. Provide lock blocks on both stiles, minimum 4" by 24", and minimum 10" high solid top and bottom rails. Door manufacturer's "Standard" grade hollow core, stile, and rail construction may be provided only for closets and wardrobes if scheduled on drawings or selected by Architect/Owner.
- 2.06 **DOOR LOUVERS:** Door manufacturer's standard hardwood sightproof louvers complete with removable hardwood frame, fully closing core. Provide louvers of species matching face veneer for louvered doors.

- 2.08 **SOFT WOOD DOORS:** Soft wood doors shall be fabricated from Douglas Fir or Pine, and manufactured to standards for "Custom Grade" for paint finish, as defined by the Manual of Millwork of the Woodwork Institute of California, and shall include the following types:
- A. Louvered Door:** Wood louvers shall be of the same material and grade as the door stiles. Louvers shall be securely fastened to the door stiles.
- 2.09 **FIBERGLASS FRENCH PATIO DOOR SYSTEM:** Provide french glass doors, Door Model(s) as selected by Architect, 6 - 4 panel assembly, with 1/16" minimum thick face as referred to above as selected by Architect. Provide fiberglass reinforced thermoset composite, wood grained in pattern as selected by Architect, as manufactured by Thermo-tru Door System or Stanley Fiberglass Door System or approved equal.
- A. Door Type(s):** Model(s) as scheduled on drawings or as selected by Architect, with 1/16" minimum thick face as referred to above as selected by Architect. Door edges are machineable kiln-dried white pine, primed to match color of faces, lock edge reinforced with laminated veneer lumber core, lockset area reinforced with solid blocking for hardware backup. Door bottom edges to be moisture and decay-proof composite. Core to be foamed-in-place polyurethane, density 2.0 pcf minimum, K-factor of .14 for minimum thermal transmittance. The doors shall have an EWN rating of 24 with an STC of 26. Doors shall come with weather stripping and bottom sweeps, thermal break thresholds. Provide all materials and options required for proper assembly of both single and double entry doors as selected by Architect.
- 2.10 **SEALING:** Seal all door edges with clear resin sealer at factory or mill, except prefinished doors.
- 2.11 **FACTORY PREPARATION OF DOORS:** Prefit and premachine the following wood doors and frames for hardware at factory or mill; other wood doors may be prefitted and premachined at Contractor's option:
1. Wood doors and frames, (Pre-Hung).
- A. Prefitting:** Prefit doors in accordance with referenced NWWDA and WI Standard except as otherwise detailed, lock stiles beveled to conform to the hardware. Apply clear resin sealer on edges after sizing.
- B. Hardware Preparation:** Prepare doors to receive hardware, including mortises for butts, locksets, concealed closers, and all other door hardware furnished under Section 08 71 00. Obtain templates from hardware supplier. Coordinate placement with the metal frame supplier so that doors and frames are properly fitted and equipped when installed, 3/64" maximum tolerance allowed in placing hardware.

- C. **Seal** all mortises and cutouts with clear resin sealer.

**PART 3 - EXECUTION**

3.01 INSTALLATION: Refer to Division 6, Section 06 20 00.

END OF SECTION

**SECTION 08 21 00**

**LIGHTWEIGHT DOORS**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide lightweight doors as indicated, specified, and required.

**A. Work In This Section:** Principal items include:

1. Doors.
2. Hardware.
3. Door glazing.

**B. Related Work Not In This Section:**

1. Door frames.

1.02 SUBMITTALS: Refer to Section 01 33 00 for procedures.

**A. Shop Drawings:** Provide shop drawings, indicating door construction, hardware, frame assembly and finish.

**B. Product Data:** Provide manufacturer's technical data and installation instruction for approval of the Architect.

1.03 QUALITY ASSURANCE: Products are similar to products by Eliason Corporation or approved equal.

1.04 GUARANTEE: Provide a one (1) year written guarantee on door hardware and installation.

**PART 2 - PRODUCTS**

2.01 LIGHTWEIGHT DOORS: Shall be as manufactured by Eliason Corporation, Easy Swing Door Division, (800) 828-2655.

**A. Door Body:** Door body shall be 3/4" solid core exterior grade plywood. Finish with .032" decorative laminate both sides.

**B. Plastic Laminate Finish:** Plastic laminate shall be as per interior finish schedule, contact Tenant Improvement Architect.

**C. Door Hardware:** All door hardware shall be finished in stainless steel or clear anodized aluminum, hinges shall have stainless steel finish.

- D. Door Frame:** Door frame shall be as per manufacturer's specification flush design as indicated and specified in Section 06 20 00 Finish Carpentry.
- E. Windows:** Size as show, clear Plexiglas.
- F. Impact/Base Plates/Edge Trim:** Stainless steel both sides, size as shown.

### **PART 3 - EXECUTION**

- 3.01 **INSTALLATION:** Prior to installation of doors and hardware, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may be properly commenced. Contractor shall protect doors from all damage during storage, installation, and until final acceptance. Install doors flush, plumb, true and in strict accordance with all pertinent codes and regulations, the original design, approved shop drawings, and the manufacturer's recommendations. Doors shall be smooth operating and firmly anchored into position.
- 3.02 **CLEAN-UP:** Contractor shall clean doors and hardware prior to acceptance with manufacturer's recommended products. Use no abrasive or caustic agents. Hinges shall be lubricated as per manufacturer's specifications. All clean-up shall be performed as per specification in Section 01 70 00, Contract Closeout.

END OF SECTION

**SECTION 08 31 00**

**ACCESS DOORS**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide access doors complete as indicated, specified, and required.

**A. Work In This Section:** Principal items include:

1. Provide access doors and panels as indicated on Architectural drawings.

**B. Related Work Not In This Section:**

1. Lath and plaster.
2. Gypsum wallboard.
3. Hanger wires and framing for suspended grid acoustical ceilings.
4. Thermal and sound insulation.
5. Furnishing access panels for mechanical and electrical trades.

1.02 SUBMITTALS: Refer to Section 01 33 00 for procedures.

**A. Shop Drawings:** Submit Shop Drawings showing details for each door application in typical partitions, walls, ceiling, and support framing system.

**B. Product Data:** Submit complete materials list for all Work of this Section.

**C. Samples:** Submit such Samples as Architect may request.

**PART 2 – PRODUCTS**

2.01 ACCESS DOORS AND PANELS: Karp or Milcor; Style K at plaster; Style DW for wallboard finish; Style M-Standard at masonry; Style M-Stainless at ceramic tile; Style AP or AT as required at ceilings. For fire-rated walls, provide fire-rated access doors bearing UL required fire-resistive label. Provide automatic closing when required.  
**Stainless steel shall be required in wet areas such as kitchens and restrooms.**

**PART 3 - EXECUTION**

3.01 INSTALLATION OF ACCESS DOORS AND PANELS: Install and rigidly connect to framing. Coordinate the exact required locations with related trades. Check all other Sections of Specifications for access doors and panels specified to avoid duplication.

END OF SECTION

**SECTION 08 33 00**

**COILING GRILLES**

**PART 1 - GENERAL**

- 1.01 DESCRIPTION: Division 1 applies to this Section. Provide coiling metal doors and grilles complete as indicated, specified, and required.
- A. Work In This Section:** Principal items include:
1. Coiling aluminum grilles.
- B. Related Work Not In This Section:**
1. Structural supports for doors.
  2. Finish painting.
  3. Electrical services and wiring
  4. Rough and finish carpentry.
- 1.02 SUBMITTALS: Refer to Section 01 33 00 for procedures. Submit Shop Drawings with Product Data covering all Work of this Section.
- 1.03 JOB CONDITIONS: Verify all measurements and field conditions at site prior to submittal of Shop Drawings and fabrication.

**PART 2 - PRODUCTS**

- 2.01 MANUFACTURE: Specifications are based on the products of the Cookson Company to establish intended types and qualities. Equivalent products of McKeon Doors, Overhead Door Corp., Windsor, or Pacific Rolling Doors are acceptable.
- 2.02 MOTOR-OPERATED ALUMINUM GRILLES: Cookson Type ESD10 as shown on drawings, Low profile, motor operator as required by grille size, correct operator mounting for the site conditions and equipped with an emergency chain operator, Design 5015-9 Heavy-duty pattern, curtain with self-activating concealed lock, a tubular bottom bar, and extruded aluminum guides with wear strips. Provide finish as scheduled or as selected by Architect.
- 2.04 ELECTRICAL COMPONENTS AND CONTROLS: Provide electrical items conforming to Code and UL Bulletin 325, including constant pressure down circuit unless the door is equipped with a conforming door safety device.
- 2.04 FACTORY PRIMING: Provide door manufacturer's standard gray baked metal primer on galvanized surfaces and operating devices to be field painted.

**PART 3 - EXECUTION**

- 3.01 INSTALLATION: Employ an authorized representative of manufacturer to install Work of this Section in accordance with manufacturer's printed recommendations and approved submittals. Produce secure completed installations that operate freely without bind or stoppage. Touch-up damaged or abraded primed surfaces after erection.

END OF SECTION

**SECTION 08 40 00**

**ALUMINUM STOREFRONT AND ENTRANCES**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide aluminum storefront and entrance doors as indicated, specified, and required.

**A. Work In This Section:** Principal items include:

1. Aluminum storefronts.
2. Aluminum entrance doors.
3. Factory finish on aluminum surfaces.
4. Calking and sealing.
5. Installation of hardware for aluminum entrance doors.

**B. Related Work Not In This Section:**

1. Furnishing finish hardware for all entrance doors.
2. Metal finishes specified in Section 05 90 00.
3. Glass and glazing specified in Section 08 80 00.

1.02 QUALITY ASSURANCE:

**A. Quality Standards:** In addition to Code, glass installations shall comply with ANSI Z97.1, as applicable and Federal Safety Standard 16 CFR 1201. Metal Curtain wall, Window, Storefront, Entrance guide specification manual published by A.A.M.A.

**B. To Establish Level of Quality and Performance,** drawings and specifications are based upon Arcadia AG601T Series as detailed on drawings or as selected by Architect for all applications.

**C. Reference Sections:** Requirements specified in Section 05 90 00 Metal Finishes and Section 07 90 00 Calking and Sealants, including submittal and warranty requirements.

1.03 SUBMITTALS: Refer to Section 01 33 00 for procedures.

**A. Shop Drawings:** Submit Shop Drawings for all Work of this Section, prepared and approved in advance of fabrication. Show materials, finishes, sizes, profiles, moldings, dimensioned locations of hardware items with reinforcement, methods of anchoring, assembly, erection, internal drainage, isolation, glazing, and procedures and materials. Include the manufacturer's technical and structural

data. Include structural calculations showing that materials proposed for use conform to load and deflection requirements specified.

- B. Samples and Product Data:** Obtain Architect's instruction prior to submission. Submit the following:
1. Storefront, window walls and door sections with specified finish, corner and intersecting joint construction, fasteners, and accessories.
  2. Glazing channels with manufacturer's data covering materials and warranty.
  3. Samples of glasses as requested.
  4. Cured sealant colors.
- C. Certificates:** Submit from manufacturer stating the quality, thickness, and type of all unlabeled glass delivered to the site for field cutting.
- D. Purchase Orders:** Within 35 working days after execution of the Contract, submit evidence that firm purchase orders for all glass required for the Work have been placed with the glass suppliers.

1.04 JOB CONDITIONS:

- A. Job Measurements:** Refer to Section 01 45 00. Verify field measurements pertaining to this Section. Report all detrimental differences between Drawings and field dimensions to Architect before fabricating Work of this Section.
- B. Protection:** Protect Work of this Section until completion and final acceptance. Repair or replace damaged or defective Work to original specified condition, at no additional cost to Owner. Damaged or defective Work includes surfaces which cannot be acceptably cleaned or repaired.

1.05 DESIGN RESPONSIBILITY: This specification and all criteria for the solution of a watertight and structurally sound storefront, window wall and entrance system as detailed on the drawings and herein specified is for the sole purpose of defining the design intent and performance requirements. The details shown are intended to emphasize the preferred profiles and performance requirements for this project. The Contractor is hereby advised that the responsibility for the storefront, window wall and entrances is totally his and that all designs and resolutions proposed in the Contractor's Shop Drawings, structural calculations and related documentation and certification must be demonstrated not only in the field water leakage test procedures, as approved by the Architect, but also through-out the special guarantee periods as herein specified.

- A. Adjustments:** Thickness of metal, dimension and profile adjustments shall be made in the proposed system to facilitate fabrication or erection methods or techniques, the weather ability factor, or the design and performance requirements. The design is limited only to the dimensional space allowed for

the window wall as indicated by the capacity of the system to meet or exceed the design and performance requirements specified herein.

- B. Proposal Submission:** Design proposal submissions which follow exactly the detail indicated on the drawings will not relieve the Contractor of responsibility for the design, fabrication, erection, or performance of work included in this Section.
- C. Right To Reject:** The Architect will have the right to reject components and assemblies during assembly and erection if the workmanship and intent are not in strict accord with the approved Shop Drawings, structural calculations, documentation, certifications, Samples and as herein specified.
- D. Changes:** Document changes to the Architect's Drawings and Specifications in writing for architectural review. Design proposal must equal or better the design, function and material standards as described on the Architect's Drawings and herein specified. In the event of a controversy over the design, the decision of the Architect will take precedence.
- E. Supplementary Parts:** Provide and install all supplementary parts necessary to complete the work as described on the Drawings and herein specified, though not definitely shown or specified. Unless otherwise noted or specified to be furnished or installed by another Subcontractor, this work shall include type and thickness and temper of all glass, the design and sizing of all wall sections and anchor assemblies to meet the performance, design requirements and the furnishing of inserts to be installed by others, fasteners, clips, bracing, and steel framework as required even if not shown for the proper anchorage of the storefront, window wall and entrance elements to the structure.
- F. Review of Submittals:** Architect's review of all submittals as designed in this Section will be issued only with the understanding and assurance that the Window Wall Contractor is fully responsible for the performance of all work included within the scope of this Section. The Contractor's submittals and proposals will be understood and assumed to be the most appropriate and best suited for their intended use and, in fact, as recommended for the specific use or uses, including assurance that the Owner can receive the optimum life expectancy for all materials.
- G. Systems:** Storefront and Entrance areas are as detailed on the Drawings are to be designed to accommodate the performance requirements herein specified, including, but not limited to, the accommodation of shear stresses and movement in sealant joints and the opening of joinery during dynamic movements. All metal joinery within, adjacent and common to the systems must maintain structural, weathering and watertight integrity when subjected to the performance criteria.

1.06 BUILDING DYNAMICS:

- A. Building Dynamics** are defined as any building movement or deflection caused by the singular or combined effects of wind, or seismic, thermal, live, impact and/or concentrated loads, including the kinetic deflections resulting from the dead load of materials, and live load of personnel and equipment. The design, fabrication, assembly and installation of the window wall, entrances assemblies herein specified shall accommodate all inherent building dynamics, including the fabrication, assembly and installation tolerances of related work not included in this Section, without the loss of, or any detrimental effect to, the performance requirements herein specified. The Contractor shall verify and accommodate such movements, deflections and tolerances.
- B. Window Components and Systems** shall accommodate a live load floor deflection of not less than plus or minus 3/8 inch. This is in addition to any erection, fabrication and thermal expansion deflections which shall be accommodated. Live load deflection shall be assumed to occur on individual floors but not on all floors simultaneously.
- C. Structural Design Loads:** The allowable stresses for aluminum window wall elements shall conform to the minimum standards as published in the Aluminum Association's "Aluminum Construction Manual - Specification for Aluminum Structures", dated April 1976, and other applicable codes or regulations. The minimum design loads herein specified shall comply with 2024 CBC Edition and other applicable building codes and regulations.
- D. Anchorage and Structural Support Framing:** Unless otherwise noted on the Drawings, all anchor assemblies and components, and support framing, including related connections and/or fasteners for window wall/entrance assemblies shall be designed, furnished and/or installed as required for full compliance with the specified performance criteria. All such items indicated and/or noted on the Drawings are schematic and do not necessarily indicate the exact and/or required scope, type, shape, or profile. Additional anchorage and structural support framing shall be added, or complemented as required. Bracing shall not be laterally supported to bottom flanges of the structural framing without an explicit written request submitted to and approved by the Architect. Anchorage and structural supports shall not spall or weaken the integrity of the structural support system. All structural steel to be primed. Repair prime coating after weldments.
- E. Point of Support** for the assemblies shall be properly braced in the three orthogonal directions (vertical, transverse and longitudinal) to resist loads from all directions, including but not necessarily limited to, the positive and negative wind pressures, and seismic forces.

- F. Anchorage and Support Framing** shall be designed to accommodate wind load, thermal, seismic and building movements without any harmful effect to the assemblies as herein specified, including glass and glazing and sealant applications. All anchorage clips, bolts, etc. to be designed for code stresses and no less than maximum wind loads x 1.5.
- G. Coordination with Concrete Trade:** Furnish Contractor with a dimensioned placement drawing showing location of embedded anchors. Verify correct placement of anchors before and after concrete is placed.
- H. Glass Performance:** The maximum overall size, minimum thickness and type of glass shall conform to the applicable glass manufacturer's recommendation for the openings or sizes indicated on the Drawings and the performance requirements as herein specified. Glass shall also conform to governing codes and regulations. Glass shall be designed to perform to a specified safety factor of 2.5 and sustain at maximum wind loading at a statistical glass breakage of no more than 8 lights per 1000 lights. Provide heat strengthening or tempering where conditions of thermal breakage may occur.
- 1.07 **PERFORMANCE REQUIREMENTS:** All components, assemblies and completed work included in and pertinent to the work of this Section shall conform to the following minimum performance standards and comply with 2024 CBC and local building codes. Air leakage requirements of Division 4, and codes and regulations of all governing agencies having jurisdiction. Except when applicable codes make other provisions, or as otherwise noted herein, all loads shall act in combinations that provide the most unfavorable conditions. Wind loading need not be considered as additive to seismic loading. The performance requirements shall include, but not necessarily be limited to, the following items:
- A. Thermal Movement:** Provide and/or make allowances for free and noiseless vertical and horizontal thermal movement due to the contraction and expansion of component parts, for an external surface metal temperature range of from plus 20 degrees F. to plus 180 degrees F. Buckling, opening of joints, glass breakage, undue stress on fasteners, failure of sealants or any other detrimental effects due to thermal movement of component parts will not be permitted. Fabrication, assembly and erection procedure can take into account the ambient temperature range at the time of the respective operation.
- B. Air Infiltration:** Shall comply with the most restrictive: (1) test for air infiltration, and shall not exceed 0.75 cfm per foot length of crack for fixed windows constructed on site tested in accordance with ASTM E 283-75, Standard Method of Test for Rate of Air Leakage Through Exterior Windows, Curtain walls, and Doors or with the pressure differential of 1.567 lb/sq. ft., equivalent to a 25 MPH wind; or (2) 0.06 cfm per square foot of fixed stick unit area and 0.04 cfm per square foot of unitized are when tested at 25 psf in accordance with AAMA standard TM-1-76.

- C. Water Penetration and Moisture Control:** It is the responsibility of the Contractor to furnish and install a totally watertight window and storefront assemblies.
- D. Water Penetration** in this Section is defined as the appearance of water, other than condensation, on the room side of any part of the assembly offering protection from the exterior elements to the interior building space which cannot be drained to the exterior.
- E. Provision** shall be made to drain to the exterior of the wall any water entering at joints or glazing reveals and any condensation occurring within unit. Weep slots shall be baffled or staggered.
- F. Wind Loads:**
1. Window Assemblies herein specified shall be designed for flexural, shear and torsional stresses for the following positive and negative wind pressures acting normal to the plane of the assemblies.
  2. Design: Minimum design wind pressures, both positive and negative and acting normal to the plane of the wall, shall be per CBC, Exposure "C", basic 70 M.P.H. wind speed, with a minimum of 20 psf at ground floor assemblies and 30 psf at assemblies above first floor.
  3. CBC Wind Pressures shall be used when computing allowable stresses for window wall elements and components. No wall element and wall framing, including sealants and sealed joints, shall sustain permanent deformation or failure under loading equivalent to 1.5 times the code wind pressures herein specified. However, deflection limitations herein specified may be exceeded.
  4. The Deflection at design wind pressures of any metal framing member in a direction normal to the plane of the wall shall not exceed  $L/180$  of its clear span or  $3/4"$ , whichever is less. Reduce allowable deflection where conditions require.
    - a. Maximum Deflection at design wind pressures of any metal framing member in the plane of the glass shall not exceed  $L/360$  of the clear span or  $1/8"$  whichever is less.
    - b. Deflection of Horizontal Member supporting glass, when carrying its full design dead load, shall not exceed  $L/360$  of the clear span of the member, or  $1/8"$  whichever is less.
    - c. Deflection of Any Member in a direction parallel to the plane of the wall, when carrying its full design load, shall not exceed 75% of the design clearance dimension between the member and the top of the panel, sash, glass or any other part immediately below it.
  5. Special Care must be employed in the analysis, selection, design and sizing of the wall framing, glass and sealant joints in order to insure the

functional and structural integrity of both the glass and glazing sealant and to accommodate building and window wall dynamics herein specified.

**E. Seismic Forces:**

1. Seismic Lateral Force requirements shall comply with the minimum requirements as established by the 2024 CBC Edition, and other applicable City, County, and State Codes or regulations. The seismic forces shall be assumed to come from any direction including vertical components but do not have to be considered as acting simultaneously with the wind load forces.
2. Connections anchoring the window wall units to the building structure shall be designed using a force factor ( $C_p$ ) of 2.00 in any direction. The window wall system must accommodate a story drift of not less than 0.01 times the story height in inches.
3. At Design Displacement or seismic loading (.005 times the story height) no failure or deterioration of any kind may occur including glass to metal contact.
4. At Two Times Design Displacement or seismic loading (0.010 times the story height) gaskets may disengage and sealants may split or lose adhesion, but no other failure or deterioration of any kind may occur, including glass to metal contact.

1.08 PERFORMANCE REQUIREMENTS FOR ENTRANCE DOORS STRUCTURAL:  
Resistance to corner racking shall be tested by the "Dual Moment Load" test as follows:

- A. **Test Section** shall consist of a standard top door corner assembly. Side rail section shall be 24" long and top rail section shall be 12" long.
- B. **Anchor "Top Rail"** positively to test bench so that corner protrudes 3" beyond bench edge.
- C. **Anchor a Lever Arm** positively to "side rail" at a point 19" from inside edge of "top rail". Attach weight support pad at a point 19" from inner edge of "side rail".
- D. **Test Section** shall withstand a load of 170 pounds on the lever arm before reaching the point of a 1/16" gap at the stile/rail, joint or a 3 degree rotation in the stile. Further, failure, defined as a rotation of the lever arm in excess of 45 degrees shall not be reached before 270 pounds.

1.09 WARRANTIES: Refer to Section 01 78 00 for warranty form.

- A. **General:** All work included in the Section shall be fully guaranteed for performance, materials and workmanship for a period of not less than (5) Five Years from the date of beneficial occupancy (as certified by the Architect) unless otherwise noted herein. Guarantees and warranties shall be delivered to the

Owner in duplicate, in an acceptable form, executed by an authorized officer or manufacturer of each material and shall be dated and notarized by a duly authorized Notary Public. Any failure in any of the window wall components shall result in an extension of the guarantee period until the deficiency is permanently repaired.

- B. Aluminum Entrance Doors:** Warranty against sagging or twisting of all doors as a result of normal usage for the lifetime of the installation.
- C. Glazing Channels:** Warranty for 5 years deterioration or failure of any kind including, without limitation, shrinkage causing loss of seal and failure from exposure to sun, elements, ozone, air pollution, and glass cleaners.
- D. Exterior and Interior Aluminum Sheet and Extrusion Surfaces:** Provide a Anodized Factory finish on surfaces of aluminum components in accordance with AAMA Factory Finish Standards. Refer to schedules on drawings for selections of anodized finishes and colors.
1. Aluminum components shall be finished in accordance with the designations and proprietary identifications set forth in the schedule on the drawings.
  2. Designations refer to the finishes defined in The Aluminum Association Designation System for Aluminum Finishes, DAF-45.
- E. Sealants:** Provide a written statement in approved form guaranteeing that sealed joints shall remain watertight for a period of (5) Five Years. Guarantee shall further state that installed sealants are guaranteed against the following:
1. Adhesive or cohesive failure of joints.
  2. Surface degradation or crazing greater than 3 mils in depth developing on surface of material.
  3. Staining of surfaces adjacent to joints by sealant or primer by migration through building materials in contact with them.
  4. Chalking or visible color change on surface of the cured sealant materials.
  5. Shore "A" durometer hardness to the extent stated in the manufacturer's published literature.
  6. Increase or decrease of Shore "A" durometer hardness (5 second reading) of sealant of more than 30% of value of 7-day value of Shore "A" durometer hardness of sealant.
- Note: Include a guarantee provision agreement to repair and replace, at the Contractor's expense, sealant defects which develop during guarantee period. Guarantee shall include all labor and materials required to repair and replace faulty sealants.
- F. Glass:** Guarantee to remove and replace at the Contractor's expense, any and all glass lights that fail to meet the design and performance requirements. This

replacement guarantee shall include all labor and materials required to remove and replace the faulty glass and installation.

- G. Defective Work:** Defective work shall be removed and replaced, at the expense of the Wall Contractor. Include in (5) Five Year guarantee period the provision to repair and replace, at the Contractor's expense, glass lights that fail in concentrated or massive quantities, or isolated glass breakage proven defective in manufacture or installation. Other isolated cases will be replaced at the expense of others, pending determination of cause. This special replacement guarantee shall include all labor and materials.
- H. Form of Warranty:** Guarantees and warranties shall be delivered to the Architect in duplicate, in an acceptable form, executed by an authorized officer of manufacturer of each material and shall be dated and notarized by a duly authorized Notary Public.
- I. Warranty Extension:** Any failure in any of the window wall components shall result in an extension of the guarantee period until the deficiency is permanently repaired.
- J. Corrections of Defective Work:** Should any work under this Contract be found defective in materials or workmanship, it shall be corrected in accordance with the following provisions: If, within Five (5) years after the date of substantial completion or within such longer periods of time as may be prescribed by laws or by the terms of any of the work is found to be defective or not in accordance with the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner. The Owner shall give such notice promptly after discovery of the condition. If exploratory work is required to determine the cause of the defects, the cost of this work shall be borne by the Contractor. The Contractor shall be responsible for continuing corrections of defective work beyond the guarantee period if initial corrective measures were executed per the requirements as noted above but later found to be inadequate or not acceptable after the specified period.

## **PART 2 - PRODUCTS**

2.01 **MATERIALS:** Extrusions shall be 6063-T5 alloy and temper (ASTM B221, Alloy 6.5. 10A-T5). Fasteners, where exposed, shall be aluminum, stainless steel or zinc plated steel in accordance with ASTM A164. Perimeter anchors shall be aluminum or steel providing the steel is properly isolated from the aluminum. Glazing gaskets shall be elastomeric extrusions. Major portions of door stiles shall be nominal .125" in thickness and glazing moldings shall be .050" thick.

- A. Types:** Details shown establish required sizes, types, and appearance. Provide for expansion and contraction through an ambient temperature range of 20 degrees to 130 degrees F., minimum.

- B. Manufacture:** Minor modifications in non-essential details to accommodate the use of manufacturer's standard sections of same sizes, profiles, and glazing features are acceptable, subject to approval. Provide products of one of the following manufacturers, or equal; refer to Section 01 60 00 for substitutions:
- Arcadia  
Or approved equal
- C. Window Wall Members:** Provide complete as detailed and required, including glass setting bars, transom bars, trim, mullions, and door frames. Provide necessary setting accessories, including screws, fittings, and anchors. Design all joints and connections for flush tight hairline fitting and to allow for structure and thermal movement and deflections without loss of glass edge grip and clearances or watertight integrity.
- D. Wind Load and Deflection:** Provide members of section thickness and structural properties designed to withstand Code required wind loadings without buckling, distortion, or distress, and with maximum deflection of 1/175 of the unsupported length, except minimum 20 pounds per square foot wind loading where Code allows lesser load. Provide additional bent plate or rolled steel internal stiffeners where necessary to meet deflection requirements. Pre-coat stiffeners with heavy bituminous coating to isolate from aluminum. Conform glass edge bearings and clearances to Code.
- E. Drainage:** Provide inconspicuous weep holes or equal method to ensure positive drainage of internal moisture or condensate to the exterior. Detail on Shop Drawings.
- F. Fasteners:** Place no fasteners on exposed surfaces unless approved on the Shop Drawings.
- G. Aluminum Entrance Doors:** Medium stile, unless otherwise selected by the Architect with water-repellent treated mohair weatherstripping in aluminum retainers on all four edges.
- H. Hardware Preparation:** Provide concealed hardware reinforcements in doors and frames, minimum 3/16" thick aluminum, factory applied. Cut, mill, reinforce, drill, and tap aluminum for application of finish hardware from the templates furnished by hardware supplier.

## 2.02 GLASS MATERIALS:

- A. Glass Materials:** Domestic brand conforming to ASTM C1036 and ASTM C1048 for tempered, by PPG Industries, Inc., Glass Group, Libbey-Owens-Ford, Monsanto, St. Gobain, and Spectrum, Viracon or equal. Factory cut glass lights

shall be labeled and labels shall not be removed until directed. Job-cut glass, delivered unlabeled as "stock to cut", shall be accompanied by manufacturer's affidavit stating quality, thickness, type and manufacture; no such glass shall be cut until Architect's approval of material is obtained.

- B. Plate Glass:** Low E, glazing quality, polished plate or float, 1/4" thick unless otherwise shown.
- C. Tempered Glass:** Furnish factory fully tempered glass. Handle and size glass in accordance with manufacturer's instructions. Furnish glass free of visible tong marks when installed. On each sheet, include an inconspicuous but visible label fused to the glass and placed in a lower corner, identifying the tempered glass. Provide fireman's tempered glass label if required by the local Fire Department. Furnish clear or Low E plate glass as indicated or required.
- D. Insulating Glass Units:** Drawings and Specifications are based upon the use of insulating glass units conforming to the requirements herein, which establish intended types; refer to Section 01 60 00 for substitutions.
  - 1. All insulated glazing shall be glazed at the factory. All glazing shall be (Low E) glazing constructed to an overall minimum thickness of 7/8" with two lites of DSB tempered glass (1/8"), 3/16" or 1/4" as size and loading requires. All insulated glass units shall be tested, certified and carry the required label reflecting level of testing passed an EWN of 24 an STC of 28 to 31, the Contractor shall verify with current Acoustic Report prior to purchasing glazing, along with all other requirement. All insulated glass units shall be tested, certified and carry the required label reflecting level of testing passed.

2.03 FABRICATION: For entrance doors, the door stile and the rail face dimension of the entrances will be as indicated on drawings.

- A. Corner Construction** shall consist of mechanical clip fastening, "Sigma" deep penetration and fillet welds, glazing stops shall be snap-on type with glazing gaskets.
- B. The Door Weathering on Offset Pivot Entrances** shall be thermoplastic elastomers in a tubular shape with a semi-rigid polymeric backing. Meeting stiles on pairs of doors shall be equipped with an adjustable astragal.
- C. The Storefront and Entrance Framing System** shall provide for center glazing on all sides with no projecting stops, unless indicated for special conditions on Architectural drawings. Vertical and horizontal framing members shall have a nominal face dimension of 2". Overall depth shall be approximately 6" with a 1" glass pocket width. Entrance framing members shall be compatible with glass framing in appearance.

**PART 3 - EXECUTION**

3.01 GENERAL INSTALLATION REQUIREMENTS: Conform to approved submittals and the other requirements herein.

- A. **Isolation:** Isolate aluminum from all dissimilar metals and materials other than non-magnetic stainless steel. At metals, apply on both contact surfaces a heavy brush coat of zinc chromates primer made with a synthetic resin vehicle, followed by two heavy brush coats of spar varnish based aluminum metal and masonry paint; or apply a heavy coat of alkali-resistant bituminous paint; or separate surfaces with non-absorptive exterior quality vinyl tape or gasket, or coat the surfaces with two coats of a fluid-applied neoprene membrane material. Coat both contact surfaces with alkali-resistant bituminous paint at concrete, masonry, plaster, tiles, and like cementitious materials. Conceal all isolation in finished Work.
- B. **Calking:** Provide calking and sealing as indicated and required to make Work of this Section watertight and properly finished, including joints between frames and adjoining Work. Use sealants of selected or approved colors and conform to Section 07 90 00 including warranty.

3.02 INSTALLATION OF STOREFRONT, WINDOW WALL AND ENTRANCE DOORS:

- A. **Erection:** Member or miter joints with hairline joints. Securely anchor to the building structure. Set frames level, plumb and in true alignment. Construct completely waterproof assemblies. All work under this section to be performed by an authorized Manufacturers distributor. Upon completion, a company representative shall submit a "Field Service Report" to the Owner and Architect attesting that the entire installation conforms to the company's standard of workmanship and materials.
- B. **Hardware:** Install finish hardware on entrance doors to hardware manufacturer's instructions and installation templates, and adjust for correct operation. Set thresholds in sealant.

3.03 GLAZING: Employ skilled and experienced glazers. Set all glass true and tight with glazing channels. Perform glazing in accordance with the "Glazing Manual" issued by Flat Glass Jobbers Association and PPG Technical Service Report #104, as applicable. Conform all glass edge bearings, clearances, and lap to Code.

- A. **Glass Fastenings:** Set glass in rebates with glazing blocks and spacers so glass does not touch metal, and to preclude loose or rattling glass.
- B. **Glazing Channels:** Compress channels at least 5% lengthwise during installation and at least 15% by stops.

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San Jacinto, California

ALUMINUM STOREFRONT AND  
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3.04 COMPLETION: Wash all soiled surfaces with mild soap solution, rinse with clear water, and wipe dry. Do not use harsh cleaning agents, caustics, or abrasives for cleaning. Leave free of dirt, streaks, and labels.

END OF SECTION

**SECTION 08 80 00**

**GLASS AND GLAZING**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide glass and glazing complete as indicated, specified, and required.

**A. Work In This Section:** Principal items include:

1. Glass for windows and doors.
2. Obscured glass.
3. Mirrors.

1.02 QUALITY ASSURANCE:

**A. Quality Standards:** In addition to Code, glass installations shall comply with ANSI Z97.1, as applicable and Federal Safety Standard 16 CFR 1201.

1.03 SUBMITTALS: Refer to Section 01 33 00 for procedures.

**A. Samples and Product Data:** Obtain color instructions from the Architect prior to submission. Submit the following:

1. Samples of various glasses to extent requested by Architect, 12" square with smooth edges.
2. Glazing channels with manufacturer's data covering materials and warranty.
3. Samples of unframed mirrors, 12" square with smooth edges, complete with attachments.
4. Product data for mirror adhesive.

**B. Full-Size Samples:** Install full-size Samples of glass specified below, Samples installed in the frames forming a part of the Work, locations designated by the Owner and/or Architect. Glass showing defects, including excessive distortion, which detract from the artistic effect, appearance, and design concept of the building, in the Owner's and/or Architect's opinion, shall be removed and acceptable glass installed at no extra cost to the Owner. The approved Sample installations establish the standard of quality required for all glass installations of the same kinds and types.

**C. Certificates:** Submit from manufacturer stating the quality, thickness, and type of all unlabeled glass and glazing delivered to the site for field cutting.

- D. Purchase Orders:** Within 35 working days after execution of the Contract, submit evidence that firm purchase orders for all glass and glazing required for the Work have been placed with the glass suppliers.
- 1.04 **JOB CONDITIONS:** Protect glass and glazing until completion and final acceptance. Repair or replace damaged or defective glazing to the original specified condition, at no extra cost to Owner. Damaged or defective glazing includes glass that cannot be properly cleaned.
- 1.05 **WARRANTY:** Refer to Section 01 78 00. Furnish a written warranty covering glass and glazing channels for 5 years against all defective material or deterioration including, without limitation, shrinkage causing loss of seal and exposure to sun, ozone, elements, smog and other air pollution, and commercial glass cleaners. Furnish a written warranty covering unframed mirrors against silver spoilage for 15 years.

## **PART 2 - PRODUCTS**

- 2.01 **GLASS MATERIALS:** Domestic brand conforming to ASTM C1036 and ASTM C1048 for tempered, by PPG Industries, Inc., Glass Group, Libbey-Owens-Ford, Monsanto, St Gobain, Spectrum, Viracon or equal. Factory cut glass lights shall be labeled and labels shall not be removed until directed. Job-cut glass, delivered unlabeled as "stock to cut", shall be accompanied by manufacturer's affidavit stating quality, thickness, type and manufacture; no such glass shall be cut until Architect's approval of material is obtained.
- A. Plate Glass:** Low E or Clear as indicated, glazing quality float, 1/4" thick unless otherwise shown or specified.
- B. Tinted (Low E) Plate Glass:** If indicated or required provide units as selected by the Architect, glazing quality, polished plate or float, 1/4" thick unless otherwise shown.
- C. Tempered Glass:** Furnish factory fully tempered glass. Handle and size glass in accordance with manufacturer's instructions. Furnish glass free of visible tong marks when installed. On each sheet, include an inconspicuous but visible label fused to the glass and placed in a lower corner, identifying the tempered glass. Provide fireman's tempered glass label if required by the local Fire Department. Furnish Low E or clear unless otherwise indicated or selected by the Architect or required by Title 24 requirements.
- D. Obscured Glass:** Provide glass manufactured by one of above referenced manufacturer, 1/4" unless otherwise indicated, pattern as selected by Architect.

- E. Unframed Mirrors:** Clear where indicated, mirror quality float glass, Type I, Class 1, Quality q1 silvering and 1/4" thick unless otherwise indicated, edges ground and polished, double silvered, with electro-deposited copper backing and protective back paint coat equal to Palmer Products "Mirro-Bac Paint". Provide concealed wall mounting brackets unless otherwise shown or directed.
- F. Insulating Glass Units:** Drawings and Specifications are based upon the use of insulating glass units conforming to the requirements herein, which establish intended types; refer to Section 01 60 00 for substitutions.

  - 1. All insulated glazing shall be glazed at the factory. All glazing shall be (Low E) glazing constructed to an overall minimum thickness of 7/8" with two lites of DSB tempered glass (1/8"), 3/16" or 1/4" as size and loading requires. All insulated glass units shall be tested, certified and carry the required label reflecting level of testing passed an EWN of 24 an STC of 28 to 31, the Contractor shall verify with current Acoustic Report prior to purchasing glazing, along with all other requirement. All insulated glass units shall be tested, certified and carry the required label reflecting level of testing passed.
- G. Fire Rated Glass:** Provide glass manufactured by Technical Glass Products, (800) 426-0279, bronze tinted or clear as indicated on drawings fire rated glass, thickness as indicated unless otherwise required as selected by Architect, or Approved equal.
- H. Glass Adhesive:** Standard product adhesive expressly manufactured for glass installation, equal to Palmer Products "Mirro-Mastic" with Mirro-Mastic Bond".

## 2.02 GLASS SETTING MATERIALS:

- A. Glazing Channels:** Extruded neoprene or fibrous glass reinforced core vinyl type conforming to NAAMA SG-1-70, color as approved, with serrated channel legs for a tight seal to glass, meeting 5 year warranty requirements.
- B. Blocks and Spacers:** Approved vinyl plastic or neoprene rubber type, nominal 50 to 90 Durometer except as recommended by glass manufacturer.
- C. Glazing Sealant:** Tremco Mono One-Part Sealant, or equal, approved colors. For butt glazing, use Dow Corning Corp. "Dow Corning Silicone Rubber Sealant" or General Electric Company SCS 1200 Series Silicone Construction Sealant, clear.

- 2.03 TOILET ROOM MIRRORS: Mirror quality 1/4" thick polished plate, ground edges, double-silvered, copper backed, and organic coating, bearing 5-year guarantee against silver spoilage. Provide stainless steel or aluminum channels as required for proper installation and secure with adhesive supplied by mirror manufacturer.

**PART 3 - EXECUTION**

- 3.01 **GLAZING:** Employ skilled and experienced glazers. Set glass air-tight and true with glazing channels. Perform glazing according to the "Glazing Manual" of the Flat Glass Jobbers Association and with PPG Technical Service Report #104 except as required herein. Install glass in metal frames according to manufacturer's instructions to obtain weatherproof and waterproof installations. Conform glass edge bearings, clearance, and edge laps to Code. Use glazing channels specified herein unless channels are furnished by manufacturers under other Sections.
- A. Glass Fastenings:** Set glass in rabbets with glazing blocks and spacers so glass does not contact frame. Set glass to preclude looseness and rattling.
- B. Glazing Channels:** Compress channels at least 5% lengthwise during installation, and at least 15% by stops. Produce air and water tight installations.
- 3.02 **UNFRAMED MIRRORS:** Clean backing of paint and other deleterious materials, then prime with bond coat. Embed all mirrors in a continuous contact of glass adhesive. Provide top and bottom edge channels and corner guards of stainless steel or aluminum as indicated or directed.
- 3.03 **COMPLETION:** Do not use harsh cleaning agents, caustics, acids, or abrasives for cleaning. Wash and polish glass both sides and leave free of dirt, streaks, and labels.

END OF SECTION

**SECTION 08 90 00**

**LOUVERS AND VENTS**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide louvers and vents complete as indicated, specified, and required.

**A. Work In This Section:** Principal items include:

1. Extruded aluminum louvers.
2. Formed sheet metal louvers.
3. Formed sheet metal door louvers.
4. Gravity vents.
5. Prefabricated equipment vents and tubing.

**B. Related Work Not In This Section:**

1. Calking and sealants.
2. Paint.
3. Air-handling louvers connected to ductwork.
4. Blank-off plates for air-handling louvers.
5. Louvers in hollow metal doors and frames.
6. Vents as specified in other sections.

1.02 QUALITY ASSURANCE:

**A. Performance:** Where louvers are indicated to comply with specific performance requirements, provide units whose performance ratings have been determined in compliance with Air Movement and Control Association (AMCA) Standard 500.

**B. AMCA Certification:** Where indicated, provide louvers with AMCA Certified Ratings Seal evidencing that product complies with above requirements.

1. Comply with SMACNA "Architectural Sheet Metal Manual" recommendations for fabrication, construction details and installation procedures, except as otherwise indicated.

**C. Field Measurements:** Verify size, location and placement of louver units prior to fabrication, wherever possible.

**D. Shop Assembly:** Coordinate field measurements and shop drawings with fabrication and shop assembly to minimize field adjustments, splicing, mechanical joints and field assembly of units. Preassemble units in shop to greatest extent possible and disassemble as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.

1.03 SUBMITTALS: Refer to Section 01 33 00 for procedures.

- A. **Product Data:** If requested by Owner submit manufacturer's specifications; certified test data, where applicable; and installation instructions for required products, including finishes.
- B. **Shop Drawings:** If requested by Owner and/or Architect submit shop drawings for fabrication and erection of louver units and accessories. Include plans, elevations and details of sections and connections to adjoining work. Indicate materials, finishes, fasteners, joinery and other information to determine compliance with specified requirements.
- C. **Samples:** Submit six-inch square of each required aluminum finish. Prepare samples on metal of the same gauge and alloy to be used in work. Where normal color and texture variations are to be expected, include two or more units in each sample showing the limits of such variations.

## **PART 2 - PRODUCTS**

2.01 ACCEPTABLE MANUFACTURERS:

- A. **Available Manufacturers:** Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to, the following:

Airline Products Company  
The Airolite Company  
American Warming and Ventilating Company  
Construction Specialties, Inc.  
Industrial Louvers, Inc.  
Ruskin Manufacturing Company

2.02 MATERIALS:

- A. **Galvanized Sheet Steel:** ASTM A526 and A527, with ASTM A525, G90 zinc coating, mill phosphatized.
- B. **Cold-rolled Sheet Steel:** ASTM A366, Class 1, matte finish.
- C. **Aluminum Sheet:** ASTM B209, Alloy 3003 or 5005 with temper as required for forming, or as otherwise recommended by metal producer to provide required finish.
- D. **Aluminum Extrusions:** ASTM B221, Alloy 6063-T52.

- E. Fastenings:** Use same material as items fastened, unless otherwise indicated. Fasteners for exterior applications may be hot-dip galvanized, stainless steel or aluminum. Provide types, gauges and lengths to suit unit installation conditions. Use Phillips flat-head machine screws for exposed fasteners, unless otherwise indicated.
- F. Anchors and Inserts:** Use non-ferrous metal or hot-dip galvanized anchors and inserts for exterior installations and elsewhere as required for corrosion resistance. Use steel or lead expansion bolt devices for drilled-in-place anchors. Furnish inserts, as required, to be set into concrete or masonry work.
- G. Bituminous Paint:** SSPC-Paint 12 (cold-applied asphalt mastic).

2.03 FABRICATION, GENERAL:

- A. Provide** louvers and accessories of design, materials, sizes, depth, arrangement, and metal thicknesses indicated, or if not indicated, as required for optimum performance with respect to airflow; water penetration; air leakage, where applicable (for adjustable units, if any); strength; durability; and uniform appearance.
- B. Fabricate** frames including integral sills to suit adjacent construction with tolerances for installation including application of sealants in joints between louvers and adjoining work, where applicable.
- C. Include** supports, anchorages, and accessories required to achieve a complete assembly.
- D. Provide** vertical mullions of type and at spacings indicated but not further apart than recommended by manufacturer of seventy-two inch on center whichever is less. At horizontal joints between louver units provide horizontal mullions except where continuous vertical assemblies are indicated.
- E. Provide** sill extensions and loose sills made of same material as louvers, where indicated, or required for drainage to exterior and to prevent water penetrating to interior.
- F. Join** frame members to one another and to stationary louver blades by welding, except where indicated otherwise or where field bolted connections between frame members are made necessary by size of louvers. Maintain equal blade spacing, including separation between blades and frames at head and sill, to produce uniform appearance.

2.04 STATIONARY EXTRUDED ALUMINUM WALL LOUVERS:

- A. Horizontal Drainable Blade Louvers:** Units designed to collect and drain water to exterior at sill by means of gutters in front edges of blades, and channels in jambs and mullions. Furnish units with extrusions not less than 0.081-inch thick, of depth and sizes indicated, complying with following performance requirements.
1. Free Area: Not less than 50 percent for a 48" x 48" size.
  2. Static Pressure Loss: Not more than 0.15-inch of water gauge at airflow of 1050 fpm free area velocity in intake direction.
  3. Water Penetration: Not more than 0.052 ounces per square foot of area at an airflow of 1000 fpm free area velocity.
  4. AMCA Certification: Furnish units bearing AMCA Certified Ratings Seal.
  5. Furnish units complying with following performance requirements.

2.05 STATIONARY FORMED SHEET METAL LOUVERS:

- A. Horizontal Drainable Blade Louvers:** Unit designed to collect and drain water to exterior at sill by means of gutters on front edges of louver blades and channels in jambs and mullions; of depth and sizes indicated, fabricated from the following metal:
1. Aluminum: Not less than 14 gauge.

2.06 ADJUSTABLE LOUVERS:

- A. Operation:** Provide adjustable blade louvers (AdjLvr) at locations and of type indicated; with manufacturer's recommended bearings and operating mechanisms to suit louver size and method of operation.
1. Hand operation with spring, chain, wall bracket, and 160 degree F (71 degrees C) fusible link.

2.07 LOUVER SCREENS: Provide removable screens for exterior louvers where indicated. Fabricate screen frames of same metal and finish as louver units to which secured, unless otherwise indicated. Provide rewirable frames consisting of formed or extruded metal with a driven spline or insert for securing screen mesh. Use insect screen where indicated, of the following:

1. Insect mesh, 0.063-inch aluminum wire.
- A. Locate Screens** on inside face of louvers, unless otherwise indicated. Secure screens to louver frames with machine screws, spaced at each corner and at twelve inch on center between.

- 2.08 FIRE RATED LOUVERS: Provide tightly fitted spring loaded automatic closing louvers with operable blades equipped with smoke activated closing device.
- 2.07 PREFABRICATED EQUIPMENT VENTS: Provide and install prefabricated vents and tubing as manufactured by a manufacturer doing this type of business for at least 10 years. Coordinate with the rough carpenter for opening requirements and plumbing as to their requirements for proper installation of dryer vents where indicated on drawings.
- 2.09 METAL FINISHES: Comply with NAAMM "Metal Finishes Manual" for finish designations and application recommendations, except as otherwise indicated. Apply finishes in factory after products are assembled. Protect finishes on exposed surfaces with protective covering, prior to shipment. Remove scratches and blemishes from exposed surfaces which will be visible after completing finishing process. Provide colors or color matches as indicated, if not otherwise indicated, as selected by Architect from manufacturer's standard colors.

**A. Aluminum Finishes:**

1. Color Anodized Finish: AA-C22A42 (medium matte etched finish with 0.7 mil minimum thick integrally colored anodize coating). Apply protective coating of clear acrylic lacquer, not less than 0.50 mill dry film thickness.

**B. Ferrous Metal Finishes:**

1. Preparation: Clean surfaces of dirt, grease and loose rust or mill scale, including items fabricated from galvanized steel, if any. Apply finish to surfaces of fabricated and assembled units, whether exposed or concealed when installed, after pretreating with a conversion coating suited to organic coating applied over it.
2. Factory-Primed Finish: Where painting after installation is indicated (not work of this section), apply air-dried primer immediately following cleaning and pretreatment.

**PART 3 - EXECUTION**

- 3.01 PREPARATION: Coordinate setting drawings, diagrams, templates, instructions and directions for installation of anchorages which are to be embedded in concrete or masonry construction. Coordinate delivery of such items to project site.
- 3.02 INSTALLATION: Locate and place louver units plumb, level and in proper alignment with adjacent work.

- A. Use Concealed Anchorages** wherever possible. Provide brass or lead washers fitted to screws where required to protect metal surfaces and to make a weather-tight connection.
- B. Form Tight Joints** with exposed connections accurately fitted together. Provide reveals and openings for sealants and joint fillers, as indicated.
- C. Repair Finishes** damaged by cutting, welding, soldering and grinding operations required for fitting and jointing. Restore finishes so there is no evidence of corrective work. Return items which cannot be refinished in the field to shop, make required alterations, and refinish entire unit, or provide new units, at Contractor's option.
- D. Protect** galvanized and non-ferrous metal surfaces from corrosion of galvanic action by application of a heavy coating of bituminous paint on surfaces which will be in contact with concrete, masonry or dissimilar metals.
- E. Provide** concealed gaskets, flashings, joint fillers, and insulation, and install as work progresses to make the installations weathertight.
- F. Refer to Section 07 90 00** for sealants in connection with installation of louvers.

END OF SECTION

**SECTION 09 22 36**

**LATH AND PLASTER**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide lath and plaster complete as indicated, specified herein, and required.

**A. Work In This Section:** Principal items include:

1. Exterior lath and plaster.
2. Skim coat finish on EPS trim.
3. Skim coat finish on concrete masonry.
4. Plaster accessories as required.

**B. Related Work Not In This Section:**

1. Wood/Metal studding, sheathing, furring, and support framing for plaster.
2. Masonry.
3. Paint.

1.02 QUALITY ASSURANCE:

**A. Reference Specifications:** Except as otherwise indicated or specified, conform to applicable requirements of the Plaster/Metal Framing Systems/Lath Manual as published by California Lathing and Plastering Contractors Association, Inc., Los Angeles, California, hereinafter referred to collectively as Ref Spec. and Referenced Edition of the CBC Code. In case of conflict between any code, law, ordinance, Ref Spec, and requirements herein, comply with the better or most restrictive requirements.

**B. Scaffolds and Equipment:** Install and maintain all necessary scaffolds, staging, trestles and planking, in strict conformance with CCR Title 8 and all applicable laws and ordinances.

**C. Mock-Up Installation:** Prior to the installation of the Plaster stucco system work, provide a sample mock-up panel using materials specified for final work. The panel must be constructed as per the Architects size and dimension requirements. Demonstrate the proposed range of color, texture and workmanship to be expected in the completed work including paint as specified in Section 09 91 00. Show a cut-away in the panel exposing the weather barrier, metal lath and drainage weep of the system on a perimeter edge of the panel. Obtain Architect's acceptance of visual qualities of the sample panel. Maintain sample panel throughout the construction process and dispose of when project is completed.

1.03 SUBMITTALS: Refer to Section 01 33 00 for procedures.

**A. Preliminary Samples:** Submit the following:

1. Exterior plaster texture and finish, 48" square, prepared at site with each type color and size of plaster with trim window sample and accessories.

**B. Provide the following submittals for acceptance:** First submittals and re-submittals shall be complete and in the required form. Re-submittals shall include requested corrections and shall respond to previous comments. Each sheet that is revised shall bear a revision date, number and revised detail included. Failure of a submittal to be complete, in the proper form, responsive to comments and identifying revisions shall, at the reviewer's discretion, be cause for disapproval and return of document without review, with the Contractor bearing full responsibility for any resultant delay. Failure to review comments or to note a noncompliance with plans and specifications shall not relieve the Contractor from his obligation to comply. Allow sufficient time for preparation and processing of re-submittals to avoid conflicts with schedule.

1. Submit Stucco Plaster System product data and specifications for any materials, or fabrication techniques used in the 3 coat plaster system work. Include instructions and or recommendations for installation and maintenance. Include certified test reports showing compliance with requirements where test methods are indicated.

1.04 MANUFACTURERS' WARRANTY: Refer to Section 01 78 00. Furnish to the Owner a written warranty against all defects in materials, workmanship for a period of 5 years. Before substantial completion, the Contractor shall submit a written warranty, signed by both the manufacturer and the applicator agreeing to repair or replace discolorations or other defects in materials and workmanship of the Plaster System work and damaged adjacent work during the warranty period. The Contractor shall guarantee to the Owner that all work is in accordance with drawings and specifications, and that the Plaster System is free from defects in materials and workmanship from the date of acceptance of the work by the Owner. Contractor shall include with bid a proposed copy of the manufacturers' warranty.

## **PART 2 - PRODUCTS**

2.01 METAL LATH AND ACCESSORY MATERIALS: Each bundle of lath shall be sealed with a metal tag bearing the lath designation, weight and manufacturer's name.

**A. Expanded Metal Lath:** Provide on horizontal surfaces, small diamond mesh, 3.4 pounds per square yard, expanded from galvanized steel sheets. For installation on exterior metal stud surfaces, furnish lath having factory-applied waterproofed paper backing meeting Fed Spec UU-B-790A (1), Type I, Grade B for metal stud construction. For installation on exterior wood sheeted surfaces, install (2) two

layers of Grade D paper in accordance with Code, by USG, Cemco, Amico, Western Metal Lath, or equal. Furnish paper-backed lath for use over solid backing except of the self-furring type. Where required by the Building Code, paper backings shall have flame spread rating of 25 or less when tested according to ASTM E84 and shall bear UL label.

- B. Wire Metal Lath:** Provide Structa Mega Lath by Structa Wire Corp. or approved equal. For installation on exterior wood sheeted surfaces, install "Jumbo Tex 60" exterior lath paper (2) two layers of Grade D paper in accordance with Code, by USG, Cemco, Amico, Western Metal Lath, or equal. Where required by the Building Code, paper backings shall have flame spread rating of 25 or less when tested according to ASTM E84 and shall bear UL label.
- C. Corner and Strip Reinforcing Lath:** Flat or shaped reinforcing units as indicated or detailed on drawings, metal or galvanized woven wire metal lath types, conforming to ASTM C933, no less than 2.5 pounds per square yard, outstanding legs minimum of 2" for wire lath and 3" for metal lath when formed for angle reinforcing. Use galvanized type for use with galvanized metal lath.
- D. Waterproofing Paper:** Provide two layers of "Jumbo Tex 60" double-ply reinforced laminated paper, water proof rating conforming to requirements of Fed. Spec. UU –B-790B and Building Code Standard 17-1, Type 1, Grade D, having a flame spread rating of 25 or less per ASTM E84 test and approved by SFM. Horizontal surfaces and exterior openings, refer to Section 07 12 00, provide flexible flashings where detailed or indicated on drawings as manufactured by Fortifiber or Grace Vycor Plus, 25 mil. Install membrane then apply a layer of building paper over waterproofing as a membrane break. Install in accordance with manufacturer's recommendations and specifications.
- E. Plastering Accessories:** Provide vinyl accessories where applicable, if none available then provide minimum 24 gage zinc alloy with expanded wings. Include casing beads, expansion screeds, vents and other items as shown, specified or required for proper installation.
1. Exterior Expansion Screeds: Sizes and profiles indicated or directed, with expanded wings unless otherwise shown or required by installation.
  2. Casing Beads: Amico, Cemco, Western Metal Lath, Superior, USG, or equal, similar to Type 66 by 7/8" high for exterior plaster.
  3. Exterior Corner Reinforcement: Woven wire type with longitudinal wires, zinc coated as manufactured by Stockton Wire Products Co., K-Lath Division of Tree Island, Stucco-Lok by Western Metal Lath, or equal, per Detail 15-A, Section 2 of Ref Spec.
  4. Soffit Vents: Vinyl or zinc coated metal soffit vents in sizes and shapes as detailed on drawings by Western Metal.
  5. Vinyl and/or Aluminum Accessories: Extruded types shown by Fry Reglet, or equal. Provide prefab intersections.

2.02 PLASTER MATERIALS:

- A. **Exterior Stucco:** Conforming to general requirements of the "Specifications and Standards for Manufactured Stucco Finishes" of the Stucco Manufacturers Association, manufactured by Omega Products using the following System where indicated or required: Omega Color-Tek –Plaster System as selected by Architect, or approved equal systems by another manufacturer, materials shall be delivered in manufacturer's sealed containers, requiring only addition of water for use. Provide a System 16/20 Sand Finish with color(s) as scheduled on drawings or as selected by Architect.
- B. **Super Cement:** Omega Super Cement with fibers, mix and apply per manufacturers' specifications.
- C. **CMU Primer:** Bond Crete primer, apply per manufacturers' specifications.
- D. **Water:** Clean, potable and from domestic source.
- E. **Sand:** Washed natural sand conforming to ASTM C897, except sand gradation shall conform to Section 6 of Ref Spec.
- F. **Plaster Mixing:** Machine mix all plaster in the proportions specified with only sufficient water to attain proper consistency for application. Clean mixers and tools and keep free of hardened plaster materials. If plaster base coats are machine applied, take samples of plaster from nozzle of the plastering machine hose and perform slump tests using a 2" by 4" by 6" cone; mix plaster to maximum slump of 2-1/2" for portland cement plaster.

**PART 3 - EXECUTION**

3.01 INSTALLATION OF METAL LATH AND PLASTER ACCESSORIES: Conform to requirements of Ref Spec Sections 4 and 5 except as exceeded by requirements of Building Code or requirements specified herein.

- A. **Lathing:** Conform to ASTM C841, as applicable, and to requirements herein. Use galvanized expanded metal lath without paper backing for horizontal plaster. Use expanded metal lath with paper backing for exterior vertical or sloping exterior plaster.
  - 1. **Metal Lath:** Apply lath with long dimension across bearings. Lap sides 1/2" and ends 1". Break lath continuity at expansion screeds. Wire tie lath to all supports at 6" centers. Tie each lap with 18-gage wire midway between supports at sides and 6" intervals on ends.
  - 2. **Expanded Metal Lath with Paper Backing:** Install, lap backings, handle and screw fasten in strict conformance with manufacturer's printed

instructions and Code approvals. In all cases, install waterproofed paper backings "shingle" fashion to ensure positive drainage of water to the outside, including proper "shingling" with flanges of accessories and metal joints. Do not run the paper backing continuous behind expansion joints, control joints, and like fittings and flashings; extend up and behind the metal flanges above and down over metal flanges below. At vertical expansion joints, cut lath, overlap paper backings, and wire tie lath to expanded wings of joints. Maintain full waterproof continuity. Use same lath of self-furring type where installed on gypsum sheathing. Space screws at maximum 6" centers along all supports.

3. Ceiling and Soffit Lath: On metal supports, provide an additional 11 gage wire ties at 24" along all supports.
4. Building paper and self adhering membrane flashings shall be covered with finish material within 30 days of application. Building paper and membrane flashings shall not be exposed to UV light beyond 30 days.
5. Opening reinforcement: All window and door opening corners shall be reinforced with an 8" x 18" diagonally placed expanded metal lath reinforcing "butterfly".

**B. Lathing Accessories:** Set metal accessories plumb, level and true and shim where necessary. Miter accessories at corners and accurately and tightly fit exposed joints. Install sections in longest practicable length with minimum splicing. Fasten directly into solid structural wood framing at not more than 12" centers.

1. Exterior Corner Reinforcing: Install for full length of external angles of portland cement plastering.
2. Casing Beads and Plaster Stops: Install at free edges of plaster, wherever plaster abuts against other finish material, and elsewhere as indicated.
3. Plaster Expansion Joints: Expansion and control joints shall be applied over the building paper, but shall break the lath. Install types as shown and approved, joints and connections coped and shingled to prevent entry of water. Where directed or necessary, seal connections with sealant conforming to Section 07 90 00, at no extra cost to Owner. Where not shown, provide expansion joints for exterior plaster at maximum 10-foot intervals and as required to divide plaster into maximum 60 square foot areas, locate as detailed on drawings or as directed by the Architect.
4. Weep and Vent Screeds: Install at top and bottom of exterior walls.
5. Drip Screeds and Soffit Vents: Install where shown, approved type for each location.

3.02 APPLICATION OF PORTLAND CEMENT PLASTER: Apply plaster on metal lath to minimum 7/8" to 1" total thickness measured from face of studs.

**A. Measuring and Mixing Plaster:** Mix in accordance with manufacturers recommendations. Apply super cement plaster for base coats. Use a factory

prepared stucco for finish coat. Apply plaster within 1/2 hour of mixing. Do not retemper or use material that has partially set, or is caked or lumpy.

**B. Exterior 3 Coat Plaster System:** Provide scratch and brown coat of Super cement plaster.

1. Application of Base Coats on Lath.
  - a. Scratch Coat: Apply scratch coat not less than 3/8" thick from face of supports to crest of scores, completely embedding wire fabric lath and forming good key on metal lath. Thoroughly scratch in one direction only and keep at optimum moisture content with fog spray for 48 hours minimum before second coat is applied.
  - b. Brown Coat: Set temporary wood or metal spot or strip grounds and bring plaster to true planes between metal joints. Apply brown coat plaster not less than 3/8" thick. Use long rigid darbies controlled by the grounds and bring the surfaces to a straight, plumb, and true condition about 1/8" back of metal trim edges and flanges. As each area is applied, check the surface with stringlines, or equivalent, and immediately correct low or high areas. After straightening, remove temporary grounds and fill the voids with plaster. Float the surface to correct texture for finish coat, keep moist for 72 hours, and allow to air cure for 10 to 14 days before applying finish coat.
  - c. Curing. Apply fine fog spray of water as soon as plaster base coats are sufficiently set to prevent injury. Do not let plaster dry out between water applications.
2. Application of Finish Coat Systems: Refer to Omegas specifications for the Omega Color-Tek Stucco Finish as to application methods and requirements. Apply finish coat with color and texture matching approved Site samples. Retest brown coat surfaces for straight and true before applying and correct defects. Apply system finish coat at least 8 days after application of brown coat. Dampen surface of brown coat evenly to obtain uniform suction. Lay out finish coats to permit completion of an entire area between joints and screeds, or carry work to a natural break point. Work the top and bottom of walls and areas within screeds simultaneously with no dry laps, producing uniform finish and appearance, free of lap and tool marks, crazing, checking, waviness, low or high spots, offsets or other defects.

3.03 **SKIM COAT FINISH ON MASONRY AND CONCRETE:** Apply Bond Crete bonding agent prior to commencing skim coat plastering. Apply leveling coat of scratch coat portland cement plaster as required to correct irregularities in masonry or concrete surfaces, keep damp for 72 hours. Apply a skim coat plaster finish to a nominal 1/2" thickness. Apply plaster by the double-back method, fill out to a true, plumb, and straight surface, and trowel and retrowel to finish approved by the Owner and/or Architect, match approved sample.

- 3.04 PLASTER PATCHING: Plaster containing cracks, blemishes, blisters, pits, checks, discolorations or other defects is not acceptable. Remove defective plaster and replace with conforming plaster as approved. Restore surfaces damaged, stained, or defaced by plastering as directed, at no extra cost to Owner.

END OF SECTION

**SECTION 09 25 00****PREFORMED ARCHITECTURAL SHAPES****PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide field applied preformed architectural shapes complete.

**A. Work In This Section:** Principal items include:

1. Expanded polystyrene shaped board embedded in finish plaster coating with integral color and texture.
2. Installation and coverage procedure as specified in lath and plaster section.

**B. Related Work Not In This Section:**

1. Wood stud framing.
2. Lath and plaster.
3. Masonry.

1.02 QUALITY ASSURANCE:

- A. Requirements of Regulatory Agencies:** Complete architectural shape board and finish system shall bear approval by an ICBO Research Report and Building Department approval. System finish shall have a flame spread of 5 or less and 0 smoke developer per ASTM E84 test.

1.03 SUBMITTALS: Refer to Section 01 33 00 for procedures.

- A. Shop Drawings:** Submit covering all Work of this Section. Show details of system and all reveals, trims, and special conditions.

- B. Samples:** Obtain Architect's color range and textures, verify color in field and follow instructions and submit a 8" by 10" Sample of each color and texture required.

- C. Site Samples:** After preliminary approval of above samples, apply samples on the building for final approval. Samples shall be site constructed as required for actual installation. Prepare as many site samples as are required for approval. Approved site samples shall remain in place and govern all other installations.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING: Deliver manufactured materials in original unopened packages, containers, or bundles with manufacturer's label

intact and legible. Keep insulation and other materials dry until ready to be used. Store off the ground, under cover, and away from sweating walls and in other damp surfaces. Store at temperature not less than 38°F. Remove wet or deteriorated materials from site.

- 1.05 **JOB CONDITIONS:** Protect surrounding areas and surfaces to preclude damage during application of system. Protect finish Work when stopping for the day or when completing an area in order that water will not penetrate behind the insulation or finish.
- 1.06 **WARRANTY:** Provide manufacturer's standard warranty for five (5) years.

## **PART 2 - PRODUCTS**

### 2.01 **MATERIALS:**

- A. Architectural Foam Shape:** Expanded polystyrene 25 flame spread and 450 smoke developed, or less, per ASTM E84 or UL 723 test, High Density Foam, a 2 lbs/cu.ft. minimum thick per ASTM C578, Class A conforming to system manufacturer's requirements as manufactured by Advanced Foam (310) 515-0617 or Nesco Products or Falcon Foam (310) 515-7102 or approved equal, provide shapes as detailed on drawings, provide site samples for Architects approval prior to commencing work.
- B. Adhesive, Ground and Finish Coats:** Refer to Section 09 22 36 for materials, methods and installation recommendations for this project.

## **PART 3 - EXECUTION**

- 3.01 **INSPECTION:** Refer to Section 01 45 00, Article "Verification of Conditions", and report to Architect in writing those conditions that prevent or interfere with correct installation of Work of this Section.
- 3.02 **INSTALLATION:** Conform to approved submittals, system manufacturer's directions, specifications and Section 09 22 36 requirements.
- A. Architectural Shape - Board:** Precut and apply architectural foam shape as required to fit areas, openings, projections, reveals, etc. Using a 5/8" u-notched trowel apply ribbon of adhesive to the entire surface of each board. Apply pressure over entire surface of board to insure uniform contact and high initial grab. Abut all joints tightly and insure an overall flush level surface.

END OF SECTION

**SECTION 09 29 00**

**GYPSUM WALLBOARD**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide gypsum wallboard complete as indicated, specified, and required.

**A. Work In This Section:** Principal items include:

1. Gypsum wallboard finish on walls and ceilings.
2. Interior tile backer board.
3. Joint, edge, corner, and fastener finishing.
4. Sound insulation in gypsum wallboard partitions.
5. Sound and air sealing Work of this Section.
6. Skim coat finish where scheduled.
7. Exterior soffit boards with skim coat finish.

**B. Related Work Not In This Section:**

1. Metal stud support framing.
2. Thermal insulation.
3. Painting.
4. Lath and Plaster.

1.02 SUBMITTALS: Refer to Section 01 33 00 for procedures.

**A. Product Data:** Submit covering wallboard installations, including accessories, finishing, sealing, and manufacturer's written installation instructions with copies of Code approvals for each wall, ceiling, and shear wall system.

**B. Samples:** Submit such Samples as Owner and/or Architect may request.

1.03 JOB CONDITIONS: Make a detailed inspection of areas and surfaces to be enclosed or covered by gypsum drywall and arrange for correction of defective workmanship or materials. Ascertain that other Work enclosed by drywall has been inspected and approved before starting installation; otherwise, uncover as directed at no extra cost to Owner.

**PART 2 - PRODUCTS**

2.01 MANUFACTURE: Refer to Drawings for product and finish selections. Use products of only one manufacture throughout for each specialty item specified unless otherwise noted or approved.

2.02 MATERIALS:

- A. Gypsum Wallboard:** ASTM C1396, provide 5/8" Type X or Type C gypsum board, or any other type of drywall that may be required by fire rated assemblies shown on drawings, tapered edges for exposed surfaces, regular grade by the Code. For walls in toilets, bathrooms and showers, and where indicated, provide DensArmor Plus or equal only in thicknesses as indicated or required.
- B. Interior Tile Backer Board:** For walls in toilets and where indicated on drawings or required, provide DensShield or Durock Tile Backer Board. Install per manufacturer's recommendations.
- C. Exterior Cementitious Board:** Provide cementitious board, glass faced on both sides conforming to ASTM C1177, Dens-glass Gold as indicated or required, Type X, 5/8" thick unless otherwise indicated on drawings, install where indicated on drawings or required for proper installation.
- D. Screws:** ASTM C954, corrosion-resistant self-tapping bugle-head spiral threaded type, minimum 1" long except 1-5/8" for double layer walls or longer where RC channels are used, lengths to penetrate all supporting metal at least 3/8". Furnish specially hardened type screws where required by code for support.
- E. Drywall Nails:** ASTM C514, supplied or recommended by the wallboard manufacturer, No. 13 gage 1-5/8" long, 19/64" head, Dry Tite, acid etched or No. 098 gage, 1-3/8" long annular ringed 6d, cooler nails.
- F. Metal Trim and Corner Beads:** Of electrogalvanized steel with taping flanges, as manufactured or recommended by drywall manufacturer, corner beads at all outside corners and "J" shaped trim members where abutting other materials. Provide "bullnose" corner beads at public areas.
- G. Finishing Materials:** ASTM C475, joint tape, joint bedding compound, finishing cement, adhesive, and laminating compounds supplied or recommended by wallboard manufacturer.
- H. Calking Compound:** Permanently non-hardening type as supplied or recommended by wallboard manufacturer.
- I. Sound Insulation:** Johns Manville Fiberglass unfaced batts maybe used in locations as approved by the Architect in advance for interior sound control friction fit fibrous batts, nominal 2.80 pcf density are required for fire rated assembly meeting the required 2.80 pcf density as stated above.
- J. Resilient Channels (RC):** Provide as indicated or required an RC-1 resilient channel per ASTM C645, minimum 25 gage, designed for sound reduction by gypsum wallboard manufacturer.

- K. Acoustical Sound Isolation Clip:** Provide where indicated or required rubber acoustic clip by Dietrich RC Deluxe channels. Clip is designed for sound reduction. Install in accordance with manufacturers recommendations for sound control.

### **PART 3 - EXECUTION**

#### 3.01 INSTALLATION OF GYPSUM WALLBOARD:

- A. General:** Perform wallboard installation and finishing according to ASTM C840 and the wallboard manufacturer's instructions. Do not install wallboard until building is weathertight. Conform to fire-rating requirements, Building Code approvals, and requirements herein.
- B. Temperature:** Conform to ASTM C 840. Maintain minimum 65 degrees F within building during installation. Furnish ventilation to eliminate excessive moisture.
- C. Fasteners:** Conform to ASTM C 840. Install screws or nails so heads are below wallboard surface without breaking surface paper around the fastener. Space screws according to listed assembly requirements.
- D. Openings:** Accurately cut and fit the wallboard at openings. At door and other openings, cut wallboard to continue across area above opening head; do not cut board to both jambs and fill in area over openings with separate pieces. Make the dimension from joint over head of an opening to jamb of openings 6" minimum. Stagger joints on opposite side of partition. Maximum opening around electrical outlets 1/8" calked.
- E. Single Layer Walls:** Place wallboard horizontally with long dimension across the studs or in one-piece vertical heights, vertical joints centered on supports and staggered on walls so as not to occur on opposite sides of same stud. Secure to each stud and tack with screws keeping screws 3/8" from edges.
- F. Multi-Layer Walls:** Apply first layer same as for single layer walls, all joints in subsequent layers staggered with respect to first layer.
- G. Ceilings:** Apply wallboard with long dimension at right angles to the framing, end joints staggered and centered over framing. Use boards of maximum practical length to minimize end joints and properly support around cutouts and openings. Secure with screws or nails.

- 3.02 JOINT TREATMENT AND FINISHING: Apply tape bedding compound, tape, and at least three coats of finishing cement on exposed joints, and other joints as required for sound insulating or fire-rated construction. Apply joint cement and two or more layers of

finishing cement over screw or nail heads. Treat all inside corners with joint cement, tape, and finishing cement. Treat all outside corners with corner beads and finishing cement. Provide metal casing beads at all edges of gypsum wallboard which abut ceiling, wall, or column finish, and elsewhere as required, such as openings, offsets, etc. Make all exposed joints, trims, and attachments non-apparent following application of paint or other finishes; if the joints and fasteners are apparent, correct defects as directed with no extra cost to Owner. Seal the raw edges of plumbing openings and of boards that have been cut to fit with manufacturer's recommended sealant brushed on. When entire installation is completed and prior to installation of finish materials by other trades, correct and repair broken, dented, scratched, or otherwise damaged wallboard surfaces.

**Level 3:**

All joints and interior angles shall have tape embedded in joint compound and one additional coat of joint compound applied over all joints and interior angles. Fastener heads and accessories shall be covered with two separate coats of joint compound. All joint compound shall be smooth and free of tool marks and ridges.

**Level 4:**

All joints and interior angles shall have tape embedded in joint compound and two separate coats of joint compound applied over all flat joints and one separate coat of joint compound applied over interior angles. Fastener heads and accessories shall be covered with three separate coats of joint compound. All joint compound shall be smooth and free of tool marks and ridges.

- 3.03 AIR SEALING: Seal connections between shaft walls, ducts, plenums, and building structure airtight with specified calking compound or tape and cement, including vertical shafts.
- 3.04 SOUND INSULATED PARTITIONS: Install sound insulation continuously between studs from finish floor to top of wall in which it occurs. Where cutouts are made for J-boxes, conduit, piping, and like items, back wall insulation with insulation so that one additional layer of insulation at least 24" wide and high is placed in back of cutout. Snugly fit in place free of gaps or holes. Install acoustical sealant between the wallboard edges and floors, walls, and at structures above other than acoustical ceilings with calking compound, forming a complete perimeter seal. Install acoustical sealant around outlet boxes and other penetrations in same manner. Where resilient channels occur a separate fastener will attach the RC channel to the framing member. The gypsum wallboard will be attached to the RC channel and will at no time fasten directly to a framing member. Refer to the resilient channel guideline on the plans for information and requirements.

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3.05 SKIM COAT FINISH: Provide where scheduled, apply USG Product that will produce a Texture finish as indicated and as approved by Owner/ Architect. Apply after taping and screw head finishing is dry and sanded to produce surfaces free of trowel marks or other defects.

END OF SECTION

**SECTION 09 30 00**

**TILE MASONRY**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide tile masonry items complete as indicated, specified, and required.

**A. Work In This Section:** Principal items include:

1. Glazed ceramic tile walls and bases.
2. Ceramic tile flooring.
3. Porcelain tile.
4. Expansion joints.
5. Brass or aluminum edging angles at exposed floor tile edges.

**B. Related Work Not In This Section:**

1. Cement plaster backing for tile walls and bases.
2. Gypsum wallboard backing for tile walls and bases.
3. Concrete subslabs.

1.02 QUALITY ASSURANCE:

**A. Reference Standards:** Conform to following standards unless otherwise required herein:

1. American National Standards Institute (ANSI).
  - A108.1 Glazed Wall Tile, Ceramic Mosaic Tile, Quarry Tile and Paver Tile Installed With Portland Cement Mortar.
  - A108.5 Ceramic Tile Installed With Dry-Set Portland Cement Mortar.
  - A108.6 Ceramic Tile Installed With Chemical Resistant Water Cleanable Tile-Setting and Grouting Epoxy.
  - A118.1 Dry-Set Portland Cement Mortar.
  - A118.3 Chemical-Resistant Water-Cleanable Tile Setting and Grout Epoxy.
  - A118.4 Latex-Portland Cement Mortar.
  - A137.1 Standard Specifications for Ceramic Tile.
2. Tile Council of America (TCA). Handbook for Ceramic Tile Installation, Current Edition.

1.03 SUBMITTALS: Refer to Section 01 33 00 for procedures.

**A. Samples:** Obtain Owner's and/or Architect's instructions and submit the following for selection and approval:

1. Each type, shape, and trimmer of tile in each color proposed for use.
2. Grout colors for tile.
3. Cured sealant colors for expansion joints in tile.
4. Brass or aluminum edging angles, 12" lengths.

**B. Product Data:** Submit the manufacturer's printed directions for latex mortar and latex waterproofing.

**C. Master Grade Certificates:** Submit for each lot of tile before installing.

1.04 MOCK-UP: If required by Owner and/or Architect provide all labor and materials to build and test mock-up. Said mock-up shall be deemed extra work in accordance with Contract between Owner and Contractor. Mock-up shall accurately represent job conditions including joints, sealants, tile underlayment, anchors and tile finishes. Any deviations from or additions to details shown on Drawings are subject to the Owner's and/or Architect's approval.

1.05 PRODUCT DELIVERY AND STORAGE: Deliver all tile to the site in unopened factory containers sealed with Grade Seal bearing printed name of manufacturer and the words "Standard Grade". Keep grade seals intact and containers dry until tiles are used. Keep cementitious materials dry until used.

1.06 JOB CONDITIONS:

**A. Conditions:** Inspect and verify surfaces according to Section 01 45 00 and report defects to Contractor and/or Owner and/or Architect for correction before proceeding.

**B. Protection:** Provide protection wherever required. Do not use lumber or other material likely to stain or deface installed materials. Close tile flooring to traffic completely for 24 hours after installation; thereafter, permit traffic only over protective covering of heavy paper or equivalent.

## **PART 2 - PRODUCTS**

2.01 MANUFACTURE: Refer to Drawings for product and finish selections. Use products of only one manufacture throughout for each specialty item specified unless otherwise noted or approved.

2.02 BASIC MATERIALS:

Portland cement:	ASTM C150. Type I or II, low alkali.
Dry-set portland cement mortar:	ANSI A118.1, white or gray as specified.
Hydrated lime:	ASTM C207, Type S.
Mortar sand:	ASTM C144, at least 4% passing No. 100 sieve.
Joint sand:	Same as mortar sand except as passing No. 30 sieve.
Water:	From domestic potable source.
Waterproofing admix:	Anti-Hydro, Sika Red Label Suconem, or equal.
Reinforcing mesh:	Galvanized welded wire mesh, 1-1/2" by 2" mesh or 2" square mesh, minimum 16 gage, or equivalent or equal steel cross-section area.
Metal lath:	Expanded from galvanized steel sheets, 3.4 pounds per square yard, self furring type, galvanized nails, or as specified for reinforcing mesh.
Countertop membrane:	Either 15 pound asphalt roofing felt, minimum 6 mil polyethylene or PVC sheeting, or double layer reinforced asphalt core paper.
Latex mortar:	ANSI A118.4 (factory inclusion of aggregate is not required), one of the following, or equal: Mer-Krete Tile Setting Adhesive. Laticrete by Laticrete International.
Latex admix:	For joint grout, by same manufacturer as above latex mortar.
Epoxy, tile setting mortar and grout:	ANSI A118.3, as indicated on drawings and color as selected by Architect.
Water:	From domestic potable source.
Waterproofing membrane:	The Noble Company, Nobleseal TS for thin set tile applications, or approved equal.
Color pigments:	Pure ground mineral oxides, non-fading, alkali and lime proof, factory weighed and packaged.

2.02 TILE MATERIALS: Standard Grade conforming to ANSI A137.1, of following types.  
Mesh mounted or perforated paper backed tile is not acceptable where the mesh or paper  
remains as a permanent part of installation.

- A. Unglazed Floor Tile:** Tile as scheduled on drawings or as selected by Architect,  
colors and patterns as selected, porcelain type unglazed ceramic mosaic tile,  
cushion or all-purpose edges, premium colors and patterns, square unless  
otherwise shown.

- B Non-Slip Tile:** As above for tile, floor tiles containing at least 7-1/2% of non-rusting aggregate producing a non-slip finish. Provide where scheduled on drawings for floors in kitchens, and other wet areas.
- C. For Shower Receptor:** Quantity of 1-part portland cement and 4-parts damp sand. Use waterproofed portland cement or add waterproofing admix, amount recommended by admix manufacturer. Mix to consistency and workability that allows maximum compaction during tamping.
- 2.03 **SETTING BED MORTAR:** Machine mix mortar after first dry mixing materials. Mix mortar not less than 5 minutes after water is first added. Accurately measure materials using calibrated measuring boxes; shovel measurement is not permitted. Discard mortar that is not placed and compacted before initial set is reached. Measure all materials by volume.
- A. For Floor Tile:** Quantity of 1-part portland cement, up to 1/10-part hydrated lime, and 6-parts damp sand, mixed to consistency and workability that allows maximum compaction during tamping of mortar bed.
- B. For Shower Receptor:** Quantity of 1-part portland cement and 4-parts damp sand. Use waterproofed portland cement or add waterproofing admix, amount recommended by admix manufacturer. Mix to consistency and workability that allows maximum compaction during tamping.
- 2.04 **BOND COAT:** White or gray portland cement mixed with water and latex admix to a creamy consistency. For glazed wall tile only, gray or white dry-set portland cement mortar mixed in the same manner may be used. Do not add water or cement after initial mixing, and discard material not used prior to initial set.
- 2.05 **TILE JOINT GROUT:** Waterproofed portland cement, white for walls and gray for floor, latex admix, and color pigment to produce cured dry color matching the approved Samples. Include silica sand passing the No. 20 sieve for joints over 1/8" wide, not over twice the volume of portland cement.
- 2.06 **EDGING ANGLES:** Extruded brass or aluminum as indicated or required of minimum 1/8" leg thickness, as approved.

### **PART 3 - EXECUTION**

- 3.01 **PREPARATION:** Clean substrates of dust, dirt, oil, grease, and other deleterious substances. Conform preparation to requirements of the applicable Reference Standards and to recommendations of manufacturers of materials used.
- A. Concrete Slabs To Receive Mortar Setting Beds:** Keep concrete damp for at least 8 hours and scrub with a neat portland cement slurry just before placing setting bed mortar.

- B. Gypsum or Cementitious Wallboard:** Prime with latex primer or admix if required by instructions of latex mortar manufacturer.

3.02 **TILE INSTALLATION:** Arrange tile surfaces according to the patterns detailed or approved. Accurately set tile with flush well-fitted joints, finished in true plan, plumb, square, sloped or level as required. Neatly cut and fit the tile closely against abutting surfaces. Construct joints of uniform width. Form corners and returns with approved trimmers. Neatly drill and cut tile without marring. Carefully grind and joint tile edges and cuts. Fit tile close around outlets, pipes, and fixtures so that escutcheons or collars overlap the tile. Arrange surfaces so that not less than half-size tile occurs. Drill holes for pipe penetrations through wall tile, do not cut or split tile, and set with tight ungrouted joint.

- A. Reinforcing Mesh:** Provide mesh at the center of all mortar setting beds that are not direct-bonded to concrete slabs, lapped one full mesh and wire tied at splices. Keep mesh 1" away from expansion joints and walls. Run mesh up walls and over curbs of shower receptors, but do not secure through waterproofing.
- B. Mortar Bed Set Tile:** Dampen glazed wall tile according to applicable Reference Standard. Apply setting bed mortar, mixed as specified, and screed surfaces of setting beds to required planes. Spread no more mortar than can be covered with tile before mortar initially sets. No retempered mortar may be used. Lay tile to avoid small or unsightly cuts. Set tile with uniform joint width. Trowel a 1/32" to 1/16" thick bond coat over the plastic setting bed mortar just prior to setting tile or apply to back of each tile as placed; use white bond coat where white tile joints occur. Set tile in position and beat firmly into the mortar. Bring tile faces to a true and proper plane. Complete all beating and leveling before mortar sets and in no case later than one hour after first placing. When ready, wet and remove paper and glue, avoiding the use of excess water. At this time adjust any out-of-line or out-of-level tile.
- C. Thin-Set Tile:** Mix epoxy or latex mortar according to manufacturer's directions. Do not dampen tile. Conform to the instructions of both mortar and tile manufacturers. Apply mortar to areas no larger than can be covered with tile within 30 minutes. Remove traces of mortar from tile surfaces before final set.
- D. Joint Sizes:** Install tile with uniform joint widths as follows:
1. Glazed wall tile, 1/16" with maximum 1/8" at any location, unless otherwise indicated.
  2. Ceramic floor tile, 1/16" with maximum 1/8" at drains and any other location, unless otherwise indicated.

- E. Ceramic Tile Joint Grouting:** Grout joints full after washing out and saturating with clean water. Mix grout with water to a thick creamy consistency and force into joints for entire joint depth, flush with surface. Clean off all excess and fill skips and gaps before grout sets. Provide dampness for minimum 3-day curing and polish with clean dry cloths.
  - F. Calking:** Calk all penetrations through wall tile with latex mortar or sealant conforming to Section 07 90 00, concealed by collars or escutcheons.
  - G. Perimeter Isolation Board:** Tile shall be held back 1/4 inch from intersecting surfaces (e.g., bathtub, walls) using perimeter isolation board with the gap sealed with silicone sealant. In addition, tile baseboard is to be held 1/8 inch off the floor with the gap sealed with silicone sealant.
- 3.03 EXPANSION JOINTS: Joints shall extend down for the full depth of mortar setting bed. Provide joint backing and sealant according to Section 07 90 00, sealant of color to match joint grout and maximum 3/8" depth. Provide expansion joints in mortar set floor tile and paving areas where indicated and where abutting rigid structures. Install at toe of cove base where base occurs. If not indicated, install expansion joints in the same manner and at maximum 16-foot intervals in runs, located as directed. Provide sealant joints that closely match the color and appearance of grouted joints but of minimum 1/8" width. Provide as required by installation and as recommended by the Tile Council of America. Joints to comply with Method EJ171. Consult Owner and/or Architect as to placement.
- 3.04 CLEANING: Remove stains, cement, grout, and foreign matter when grouted joints fully set. Do not use acid. Repair all defective joints as approved.

END OF SECTION

**SECTION 09 51 00**

**ACOUSTICAL CEILINGS**

**PART 1 - GENERAL**

- 1.01 DESCRIPTION: Division 1 applies to this Section. Provide acoustical ceilings indicated, specified, and required.
- A. Work In This Section:** Principal items include:
1. Suspended exposed grid acoustical unit ceilings.
  2. Suspended exposed grid acoustical unit ceilings in kitchen.
  3. Metal trims and moldings.
  4. Access facilities.
- B. Related Work Not In This Section:**
1. Air conditioning grilles and fixtures.
  2. Lighting fixtures and wiring.
- 1.02 SUBMITTALS: Refer to Section 01 33 00 for procedures.
- A. Shop Drawings:** Submit Shop Drawings showing fully dimensioned reflected ceiling plans, grid system details, hanger wire connections to supports, and connections to materials of other trades including light fixtures and diffusers and grilles.
- B. Samples:** Submit Samples of all acoustical units and of each grid component with metal trims and moldings.
- C. Additional Submittal:** Simultaneously with submittal to Architect, transmit one print of Shop Drawings and one set of Samples to Electrical Engineer and deliver copy of transmittal to Architect.
- D. Maintenance Material:** Deliver to Owner, in unopened cases, at least 2% of total quantities of each type of acoustical unit installed in the Work.
- 1.03 PRODUCT DELIVERY, STORAGE AND HANDLING: Deliver to site in the manufacturer's original unopened containers. Keep all materials dry, clean, and protected from deterioration.
- 1.04 JOB CONDITIONS: Verify locations of various electrical and mechanical fixtures and equipment items installed above ceilings and the required access to dampers, valves, and

similar items. Coordinate the locations of hanger wires and ceiling installations with such fixtures and equipment to obtain neat symmetrical result with minimum cutting or patching of acoustical units.

- 1.05 **WARRANTY:** Refer to Section 01 78 00. Furnish to Owner a warranty against defects of materials or workmanship including sagging or disconnection of grid systems, disintegration of acoustical units, or improper operation of access facilities, for a period of 3 years.

## **PART 2 - PRODUCTS**

- 2.01 **ACOUSTICAL UNITS:** Provide Lay-in 24" x 24" units where indicated on drawings, , and Kitchen areas tiles shall be Armstrong World Industries as selected by Owner/Architect, or approved equal units by USG, Celotex Corp., U.S. Interiors, matching approved Samples and meeting specified requirements as evidenced by data in AIMA Bulletin.
- A. Flame Spread Rating:** Furnish incombustible acoustical units rated 0 to 25 flame spread rating (Class I) per ASTM E84 Tunnel Test.
  - B. Labeled Acoustical Units:** Furnish acoustical units bearing UL listing and 1-hour fire-rated label for use in fire-rated ceilings.
- 2.02 **GRID SUSPENSION SYSTEMS:** Designed to support ceiling loads with deflections not exceeding 1/360 of spans, manufactured of zinc-coated steel.
- A. Manufacturer:** Armstrong, USG (Donn) Interiors, Chicago Metallic, Eastern Products, or equal.
  - B. Fire-Rated Grid Systems:** Provide grid systems bearing UL 1-hour fire resistance label and listing for all fire-rated ceilings. Furnish painted metal trims and moldings conforming to UL Design Approval for fire-rated ceilings.
  - C. Exposed Grid System:** Conforming to ASTM C635, heavy-duty grid bearing UL label or listing as a 4-pound grid. Provide bulb-top main tees at least 1-1/2" high, cross tees of same type except may be 1" high, all tees with nominal 15/16" wide bottom flanges. Factory finish exposed grid surfaces with low-luster enamel of color to match acoustical units.
  - D. Trims and Moldings:** Of minimum 0.024" thick zinc-coated steel, exposed surfaces factory painted with low luster enamel in color to match grid.
  - E. Hanger Wires:** Minimum 12 gage galvanized annealed steel wires. Furnish heavier gage if required by Code or UL Design Approval for grid system furnished.

**PART 3 - EXECUTION**

- 3.01 **GENERAL INSTALLATION REQUIREMENTS:** Install ceilings under the supervision of an experienced superintendent. Consult with and coordinate installation with other trades. Install suspended ceilings level within a tolerance of 1/8" in 12-feet in all directions. Conform to approved submittals. Inspect and verify existing conditions according to Section 01 45 00.
- A. Pattern:** Unless otherwise indicated or specified, install ceilings in a regular pattern without border, joint lines parallel to walls. Install acoustical units symmetrically about centerlines of each room or space, avoiding narrow units at walls. Cut and closely fit units to ceiling penetrations.
  - B. Framing For Lighting and Mechanical Equipment:** Obtain information from involved trades and provide additional hanger wires, framing members, and supports in the grids as required for lighting and mechanical fixtures, equipment, and all other loadings imposed on grids, with a safety factor of 4 minimum. Provide main grid tees along all edges of mechanical and lighting fixtures bearing on the grids.
  - C. Seismic Bracing:** Provide splayed seismic bracing wires as shown and required by CBC Code. Fully detail in Shop Drawings.
- 3.02 **SUSPENDED GRID CEILINGS:** Conform to the UL Design Approval for the grid.
- A. Hanger Wires:** Space wires at maximum 48" centers along main tees and connect to structure above as shown in approved Shop Drawings.
  - B. Vibration Isolators:** Equip hanger wires with vibration isolators where located below and within 10-feet of rooms and spaces containing or supporting mechanical equipment.
  - C. Grid Members:** Space main tees at maximum 48" centers and install across tees to complete the grid. Lock suspension members together to form joints that resist 100 pounds tension and compression. Cope bottom flanges of tees, where exposed, for flush tight connections with metal trims at vertical surfaces.
  - D. Exposed Grid Acoustical Units:** Install units with all edges bearing on tees and secured with hold-down clips. Closely fit units to ceiling penetrations.
  - E. Trims and Moldings:** Provide painted metal trims and moldings at walls and other vertical surfaces and penetrations, joints closely butted, mitered at angles and corners, and flush. Lapped joints are not permitted.

**F. Ceiling Offsets:** Provide framing, trims, and other finishing materials as shown or required to properly finish at offsets or ceiling breaks, types as indicated, directed, and approved.

3.04 REPAIR, CLEANING, AND COMPLETION: Remove and replace all discolored, broken, or damaged materials. Completed ceilings shall present a smooth plane surface free of edge or corner offsets or breaks, cupping, scratches, gouges, stains or hand marks, or other defects. Clean exposed surfaces and remove foreign matter.

END OF SECTION

**SECTION 09 65 00**

**RESILIENT FLOORING**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide resilient flooring and base complete as indicated, specified, and required.

**A. Work In This Section:** Principal items include:

1. Vinyl composition tile flooring
2. Sheet vinyl flooring.
3. Rubber base.
4. Reducer strips.

**B. Related Work Not In This Section:**

1. Raised metal thresholds.

1.02 QUALITY ASSURANCE: Furnish products by the following manufacturers, or approved equals:

**Resilient Flooring**

Armstrong World Industries  
GAF Corporation  
Azrock

**Rubber Base**

Burke Rubber Company  
GAF Corporation  
Roppe Rubber Corporation

1.03 SUBMITTALS: Refer to Section 01 33 00 for submittal procedures.

**A. Samples:** Submit the following for selection and approval:

1. Chip Samples showing the full range of flooring and base colors and patterns for preliminary selection.
2. After preliminary selection, submit full-size Samples of each selected color or pattern of flooring and base for final approval.
3. Reducer strips and trims.

**B. Data:** Submit copies of the flooring manufacturer's recommended standard dryness testing, ADA, Section 4.29 compliance and required test results, and installation instruction for each type of flooring and base for approval.

**C. Moisture Testing Results:** Submit written reports covering all moisture test results for record purposes only and not for approval.

**D. Maintenance Materials:** At completion, deliver following maintenance materials to the Owner in unopened factory containers or in sealed cartons with labels identifying the contents, matching installed materials. Include unopened cans of adhesives adequate to install the maintenance materials.

1. Vinyl composition tiles, 1 unopened boxes of each color and pattern of tile.
2. Sheet vinyl flooring, one piece 20-feet long by full roll width for each location, type and pattern of flooring.
3. Rubber base, at least 100 lineal feet with 10 end stop units, 15 outside corner units, and 15 inside corner units.

1.04 **PRODUCT DELIVERY AND STORAGE:** Deliver materials to site in the manufacturer's original unopened labeled containers. Store all resilient flooring at minimum 70 degrees F for 48 hours before installing.

1.05 **JOB CONDITIONS:** Do not start flooring installation until satisfactory moisture testing results are obtained and the Work of all other trades is substantially completed, including painting. Keep the areas of installation and materials at minimum 70 degrees F during and for 10 days after installation is completed. Maintain adequate ventilation for the removal of moisture and fumes. Verify conditions as specified in Section 01 45 00.

## **PART 2 - PRODUCTS**

### 2.01 **MATERIALS:**

Vinyl composition tile:	Equal to or exceeding Fed Spec SS-T-312, Type IV, 12" by 12" by minimum 1/8", as selected from tiles matching colors and patterns of Armstrong World Industries "Excelon" or approved equal.
Sheet Vinyl:	Manufacturer and products of colors and patterns as scheduled on interior design drawings or as selected by Architect/Owner.
Rubber base:	Coved top-set 4" and 6" high as indicated on drawings using colors as scheduled on drawings or as selected by Architect, non-shrinking, 1/8" thick, with matching molded inside and outside corners and end stops.
Setting materials:	Adhesives, primers, and fillers of type and composition recommended by materials manufacturers, cut-back or equal types not containing water, factory labeled as to substrates on which application is approved by the manufacturer.
Reducer strips:	Extruded aluminum, edge-butting (not lapping) type.

**PART 3 - EXECUTION**

- 3.01 **INSTALLATION:** Conform to flooring manufacturer's recommended moisture testing and installation procedures and to requirements herein.
- A. Preparation:** Clean substrates of all deleterious substances and foreign matter. Fill cracks or depressions with latex leveling compound of the type recommended by flooring manufacturer for specific job conditions. Prior to laying flooring, test concrete for adequate dryness using the testing procedure conforming to flooring manufacturer's directions. Prime concrete floor slabs on grade; prime other slabs if so recommended by flooring manufacturer.
  - B. Vinyl Composition Tile Installation:** Mix sufficient quantity of tiles to complete each area before laying to avoid color variations. Install flooring with tight joints, pattern direction as approved. Lay flooring square with axis of rooms, starting on center lines with tile joint or tile center so that border tiles are not less than 4" wide, accurately aligned. Install reducer strips at exposed edges of flooring and where shown. Cut flooring mechanically to produce square true edges. Closely trim to pipes, jambs, outlets, and like conditions. Extend flooring into cabinets and casework without bottoms.
  - C. Sheet Vinyl Flooring:** Fully bed in waterproof latex adhesive, all seams lapped and out in a manner that produces tight joints and preserves flooring pattern. Heat weld all seams and joints according to manufacturer's directions, free of gaps. Closely trim to pipes, jambs, outlets, and like conditions.
  - D. Base and Transition/Reducer Strip Installation:** Securely cement to backing in long lengths, minimum 18" long filler pieces, top and toe continuously contacting wall and floor, all joints tight. Provide factory-made internal and external corners, and end stops where cove base ends at jambs and offsets.
- 3.02 **CLEANING, WAXING, AND COMPLETION:** Keep all flooring and base surfaces clean as installation progresses. Clean flooring and base when sufficiently seated and remove foreign substances. Immediately prior to Owner's acceptance of building, apply wax on resilient tile flooring in accordance with manufacturer's instructions. Clean adjacent surfaces of adhesive or other defacement. Replace all damaged or defective Work to the original specified condition.

END OF SECTION

**SECTION 09 67 00**

**RESINOUS FLOORING**

**PART 1 - GENERAL**

1.01 SUMMARY

**A. Section includes the surface** preparation and application requirements of high performance resinous floor coating systems for food preparation and production areas of a kitchen by a qualified applicator.

**B. Coordination:**

1. Coordinate surface preparation of substrates to avoid later difficulty or delay in performing the Work of this Section.
2. Review installation procedures under other Sections and coordinate the installation of items that must be installed prior to application of the resinous floor coating systems.
3. Substrate surface preparation and resinous floor coating application, including concrete resurfacing, to be completed by manufacturer's approved Applicator.
4. The Applicator shall coordinate with Architect regarding the availability of work areas, completion times, safety, access and other factors which could impact plant operations.

**C. Related Sections:**

1. Cast-in-Place Concrete.
2. Sealants.
3. Waterproofing.

1.02 REFERENCES

**A. This Section contains references** to the governing standards and documents listed below. They are a part of this Section as specified and modified; the current version shall apply unless otherwise noted. In case of conflict between the requirements of this section and those of the listed documents, the more stringent of the requirements shall prevail.

**B. American Concrete Institute (ACI):**

1. ACI 301-10 – Specifications for Structural Concrete
2. ACI 308R – Guide to Curing Concrete

**C. ASTM International (ASTM):**

1. ASTM D4263 – Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method.
2. Standard Practice for Measurement of Wet Film Thickness by Notch ASTM D4414 Gages.
3. ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
4. ASTM F2170 – Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.

**D. International Concrete Repair Institute (ICRI):**

1. Guideline No. 310.2 – Selecting and Specifying Concrete Surface Preparation for Sealer, Linings, and Polymer Overlays

**E. NACE International (NACE):**

1. NACE No. 6/SSPC-SP13 – Surface Preparation of Concrete

**F. SSPC: The Society for Protective Coatings, (SSPC)**

1. SSPC-SP13/NACE No. 6 Surface Preparation of Concrete

**G. Unless otherwise specified**, references to documents shall mean the documents in effect at the time of receipt of Bids. If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents, the last version of the document before it was discontinued.

1.03 SUBMITTALS

**A. Product Data Sheets:** Copies of current technical data for each component specified and applied as outlined in this Section.

**B. Safety Data Sheets:** Copies of current Safety Data Sheets (SDS) for any materials brought on- site, including clean-up solvents, repair or resurfacing mortars and lining materials.

**C. Installation Instructions:** Manufacturer’s written installation instructions for the materials specified in this Section.

**D. Qualification Data:** Submit proof of acceptability of the Applicator by manufacturer to Architect.

- E. Construction Details:** Copies of manufacturer's computer generated standard flooring details.
- F. Jobsite Layout Plan:** Including material storage/staging and equipment storage /staging.
- G. Samples:** For each resinous floor coating system submit a 3" x 6" sample of the system. Color, Texture and thickness shall be representative of the overall appearance as specified.
- H. Jobsite Reports:** Submit at the completion of Work
  - 1. Daily Reports: Include surface preparation, substrate temperature, ambient air temperature, application procedures, materials applied, material quantities, material batch number, description of work completed and location thereof.
  - 2. The Applicator shall maintain a copy of records until the expiration of the specified warranty period.

#### 1.04 QUALITY ASSURANCE

- A. Applicator Qualifications:**
  - 1. Applicator shall be qualified by the manufacturer prior to bid date.
  - 2. Installation equipment shall be acceptable to the manufacturer.
  - 3. Applicator shall establish quality control procedures and practices to monitor phases of surface preparation, storage, mixing, application, and inspection throughout the duration of the project.
  - 4. Applicator shall provide a fulltime, on-site person whose dedicated responsibilities will include quality control of the application.
  - 5. Applicator's quality control procedures and practices must include the following items:
    - a) Training of personnel in the proper surface preparation requirements.
    - b) Training of personnel in the proper storing, mixing, and application and quality control testing.
- B. Mockups:** Apply mockups of each system to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
  - 1. Apply full-thickness mockups on 48-inch- square floor area selected by Architect.
    - a) If required include 48-inch length of integral cove base.
  - 2. Simulate finished lighting conditions for Architect's review of mockups.

3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

**C. Pre-Installation Conference:**

1. Before installing mock-ups General Contractor, Applicator, and Technical Representative of the Manufacturer shall meet on-site with Architect to discuss approved products and workmanship to ensure proper application of the products and substrate preparation requirements.
2. Review foreseeable methods and procedures related to the Work including but not necessarily limited to the following:
  - a) Review Project Requirements and the Contract Documents.
  - b) Review required submittals.
  - c) Review status of substrate Work, including approval of surface preparations and similar considerations.
  - d) Review requirements of on-site quality control inspection and testing.
  - e) Review the requirements for preparing the quality control report as specified herein.
  - f) Review availability of materials, tradesmen, equipment and facilities needed to make progress and avoid delays.
  - g) Review material storage and staging.
  - h) Review equipment storage and staging.
  - i) Review waste management and disposal.
  - j) Review environmental conditions, other project conditions, and procedures for coping with unfavorable conditions.
  - k) Review regulations concerning code compliance, environmental protection, health, safety, fire and similar considerations.
  - l) Review procedures required for the protection of the completed Work during the remainder of the construction period.

**D. Single-Source Responsibility:**

1. Materials shall be products of a single manufacturer or items standard with manufacturer of specified resinous floor coating materials.
2. Provide secondary materials which are produced or are specifically recommended by resinous floor coating system manufacturer to ensure compatibility of system.

**E. Regulatory Requirements:** Conform to applicable codes and ordinances for flame, fuel, smoke and volatile organic compounds (VOC) ratings requirements for finishes at time of application.

## 1.05 PRODUCT DELIVERY, STORAGE, AND HANDLING

### A. Delivery of Materials:

1. Deliver material in manufacturer's original, unopened and undamaged packages.
2. Clearly identify manufacturer's, brand name, contents, color, batch number, and any personal safety hazards associated with the use of or exposure to the materials on each package.
3. Packages showing indications of damage that may affect condition of contents are not acceptable.

### B. Storage of Materials:

1. Materials shall be stored in accordance with manufacturer's recommendations in enclosed structures and shall be protected from weather and adverse temperature conditions. Flammable materials shall be stored in accordance with state and local codes. Materials exceeding storage life as defined by the manufacturer shall be removed promptly from the site. Store materials only in area or areas designated by the Architect solely for this purpose.
2. Store in original packaging under protective cover and protect from damage.
3. Stack containers in accordance with manufacturer's recommendations.

### C. Handling of Materials: Handle materials in such a manner as to prevent damage to products or finishes.

## 1.06 JOB CONDITIONS

### A. Environmental Requirements:

1. Proceed with Work only when temperature and moisture conditions of substrates, air temperature, relative humidity, dew point and other conditions comply with the manufacturer's written recommendations and when no damaging environmental conditions are forecasted for the time when the material will be vulnerable to such environmental damage. Record such conditions and include in daily quality control report.
2. Maintain substrate temperature and ambient air temperature before, during and after installation above 55°F and rising in accordance with manufacturer's instructions.
3. Provide adequate ventilation during installation and full curing periods of the Work.
4. Coatings shall not be applied when ambient air temperature is within 5°F of the dew point and falling.

- B. Dust and Contaminants:** Protect work and adjacent areas from excessive dust and airborne contaminants during application and curing. Schedule Work to avoid excessive dust and airborne contaminants.
- C. Lighting:** Provide permanent lighting or, if permanent lighting is not in place, simulate permanent light conditions during resinous flooring application.
- D. Close space to traffic** during resinous flooring application and for not less than 24 hours after application, unless manufacturer recommends a longer period.

#### 1.07 WARRANTY

- A. Submit manufacturer's** standard warranty for material.
- B. Submit applicator's** standard warranty for workmanship.

### **PART 2 - PRODUCTS**

#### 2.01 MANUFACTURERS

- A. Products of RES-TEK** (888) 737-8351 or approved equal.
- B. Materials specified are those** that have been evaluated for the specific service. Request for material substitutions shall be in accordance with requirements of the project specifications. Equivalent materials of other manufacturers may be submitted on written approval of the Architect. No request for substitution shall be considered that would decrease film thickness or offer a change in the generic type of coating specified. In no case will the request be considered unless information is received, in writing, ten (10) days prior to the bid opening date.
- C. Requests for substitution shall include:**
  - 1. Manufacturer's literature for each product giving name, product number, generic type, descriptive information, laboratory testing showing results equal to the performance criteria of the products specified herein.
  - 2. Side by side comparison of the performance attributes of the proposed materials as compared to the specified coating system.
  - 3. List of ten (10) projects in which each product has been used and rendered satisfactory service.
- D. After first submittal,** Architect/Owner's Agent hourly rate will be charged to review further submittals.

## 2.02 GENERAL

- A. **VOC Content:** Products shall comply with VOC limits of authorities having jurisdiction.

## 2.03 MATERIALS

- A. **Primer:** MAC-710 Primer with RT-R Component.
- B. **Body Coat:** MAC-850 Overlay Resin with RT-Filler SL and RT-Pigment.
- C. **Topcoat:** Two coats of MAC-925 Topcoat.

## 2.04 ACCESSORY MATERIALS

- A. **Patching and Fill Material:** Resinous product of or approved by manufacturer and recommended by manufacturer for application indicated.
- B. **Joint Sealant:** Type recommended or produced by manufacturer for type of service and joint condition indicated.

## **PART 3 - EXECUTION**

### 3.01 GENERAL

- A. **The Applicator shall cover** or otherwise protect finish work or other surfaces not being coated within the scope of this Section. The Applicator shall erect and maintain protective tarps, enclosures and/or masking to contain debris, including dust or other airborne particles from surface preparation or application activities. This may include the use of dust or debris collection apparatus as required at no additional cost to Owner.

### 3.02 EXAMINATION

- A. **Site Verification of Conditions:**
  1. The Applicator shall examine the areas and conditions under which the resinous floor coating Work is to be performed in accordance with NACE SP0892 and SSPC-SP13/NACE No. 6, and notify Architect in writing of conditions detrimental to the proper and timely completion of the Work.
  2. All concrete should be cured using the procedures described in ACI 308, allowing a minimum of 28 days at 75F.
  3. The Applicator shall confirm the presence of a vapor barrier to protect against the effects of moisture vapor transmission.
  4. Commencement of the Work of this Section shall indicate that the

substrate and other conditions of installation are acceptable to the Contractor and his Applicator, and will produce a finished product meeting the requirements of the Specifications. Defects resulting from accepted conditions shall be corrected by the Applicator at his own expense.

### 3.03 SURFACE PREPARATION

- A. **Concrete surfaces to receive** resinous floor coatings shall be poured with a Smooth Troweled Finish in accordance with ACI 301.
- B. **All surfaces must be clean**, dry and free of oil, grease and other contaminants, prior to preparation in accordance with NACE No. 6/SSPC-SP13. Concrete surfaces must be sound and capable of supporting the resinous floor coating system.
- C. **Prepare concrete surfaces** in accordance with NACE No. 6/SSPC-SP13 Joint Surface Preparation Standards and ICRI Technical Guidelines. Shot-blast or mechanically abrade concrete surfaces to remove laitance, curing compounds, hardeners, sealers, existing coatings, and other contaminants and to provide the recommended ICRI-CSP Profile.
- D. **Cracks, voids and other** surface imperfections should be filled with the recommended filler or surfacer prior to the installation of the materials.
- E. **Treat control joints and other** nonmoving substrate cracks to prevent cracks from reflecting through the resinous floor coating system according to manufacturer's written recommendations.

### 3.04 APPLICATION

- A. **General:** Apply components of resinous floor system according to manufacturer's written instructions to produce a uniform, monolithic wearing surface of thickness indicated.
  - 1. Coordinate application of components to provide optimum adhesion of resinous flooring system to substrate, and optimum intercoat adhesion.
  - 2. Cure resinous flooring components according to manufacturer's written instructions. Prevent contamination during application and curing processes.
  - 3. At substrate expansion and isolation joints, provide joint in resinous flooring to comply with resinous flooring manufacturer's written recommendations.
    - a) Apply joint sealant to comply with manufacturer's written recommendations.

- B. Apply products in accordance** with Manufacturer's written instruction as outlined in application guides and product data sheets.
- C. Comply with manufacturer's** written instructions for mixing and preparing materials and as applicable to substrates.
- D. Terminations shall be** installed in accordance with the StrataShield Standard Flooring Details Guide.
- E. Areas not to receive** resinous floor coating system shall be masked or otherwise protected to prevent these surfaces from being coated.
- F. Surface Temperature:** Prior to application, the surface temperature shall be per manufacturer's written recommendations.
- G. Material Temperature:** Prior to application, the material temperature shall be per manufacturer's written recommendations or between 65 degrees F and 85 degrees F. The material shall be stored at these temperatures at least 48 hours prior to use.
- H. Apply resinous floor** coatings according to manufacturer's written instructions. Use applicators and techniques suited for resinous floor coatings and substrate indicated.
- I. Apply each material** at not less than manufacturer's recommended spreading rate. Provide total cured material thickness indicated or as recommended in writing by manufacturer.

### 3.05 FIELD QUALITY CONTROL, INSPECTION AND TESTING

- A. The Applicator shall** perform the quality control procedures listed below in conjunction with the requirements of this Section.
- B. Inspect materials upon** receipt to ensure that they are supplied by the approved Manufacturer.
- C. Surface Profile:** Inspect and record substrate profile (anchor pattern). Surfaces shall be profiled equal to the required CSP amplitude as recommended by the resinous floor coating manufacturer in accordance with ICRI Guideline 310.2 and SSPC-SP13/NACE No. 6.
  - 1. Compare and record the substrate profile once every 50 square feet with the Concrete Surface Profile (CSP) comparators in accordance with ICRI Guideline No. 310.2.

- D. Surface Cleanliness:** Prepared concrete surfaces shall be inspected for surface cleanliness after cleaning and drying, prior to resurfacing or coating application.
- E. Concrete Moisture Testing:** After surface preparation verify concrete dryness in accordance with ICRI Guideline 310.2 and SSPC-SP13/NACE No. 6 and the following test methods.
1. ASTM F1869 – Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
    - a) Moisture vapor transmission not to exceed twenty (20) pounds per 1,000 square feet in a 24 hour period.
  2. ASTM F2170 – Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.
    - a) Relative humidity not to exceed 99 percent.
  3. Consult manufacturer regarding questions and or recommendations in reference to moisture problems.
- F. Measure and record ambient** air temperature, relative humidity and dew point temperature once every two hours of each work shift.
- G. Measure and record substrate** temperature once every two hours using an infrared or other surface thermometer.
- H. Dry-Film Thickness** shall be determined using a surface area calculation for material consumption.
- I. The Applicator is responsible** for keeping the Architect informed of progress so that Architect may provide additional quality control at his discretion.
- J. Inspection by the Architect** or others does not absolve the applicator from his responsibilities for quality control inspection and testing as specified herein or as required by the Manufacturer's instructions.
- K. Material Sampling:** Owner may at any time and any numbers of times during the resinous flooring application require material samples for testing for compliance with requirements.
1. Owner will engage an independent testing agency to take samples of materials being used. Material samples will be taken, identified, sealed, and certified in the presence of Contractor.
  2. Testing agency will test samples for compliance with requirements, using applicable referenced testing procedures or, if not referenced, using testing procedures listed in manufacturer's product data.

3. If test results show applied materials do not comply with specified requirements, pay for testing, remove noncomplying materials, prepare surfaces coated with unacceptable materials, and reapply flooring materials to comply with requirements.

### 3.06 MANUFACTURER'S FIELD SERVICES

- A. **Manufacturer's technical** representative shall provide technical assistance and guidance for surface preparation and application of coating systems.

### 3.07 ACCEPTANCE CRITERIA

- A. **All surfaces shall be** prepared, applied, and tested in accordance with the specification and referenced standards herein.

### 3.08 CLEANING AND PROTECTING

- A. **Protect the completed** Work from traffic, physical abuse, liquids, and chemical exposure until the complete system has thoroughly cured for 24 hours.
- B. **At the completion** of the Work, the Applicator shall remove materials and debris associated with the Work of this Section.
- C. **Clean surfaces not** designated to receive resinous floor coating system. Restore areas in a manner acceptable to Architect.
- D. **Protect the completed** Work from damage until Final Acceptance. Resinous floor coating systems damaged in any manner shall be repaired or replaced at the discretion of Architect, at no additional cost to Owner.

END OF SECTION

**SECTION 09 68 00**

**CARPET**

**PART 1 - GENERAL**

- 1.01 DESCRIPTION: Division 1 applies to this Section. Provide carpet complete as indicated, specified, and required.
- 1.02 QUALITY ASSURANCE:
- A. **Qualifications of Installing Mechanics:** Employ skilled journeymen carpet layer mechanics.
  - B. **Requirements of Regulatory Agencies:** Carpeting shall meet the requirements of Federal, State and Local Regulatory Agencies for flammability, static control, or other properties as required and as specified herein.
    - 1. The Requirements for all carpet systems must meet or exceed the requirements of the Carpet and Rug Institute (CRI) Green Label Air Quality Test Program and comply with the CALGreen code.
- 1.03 SUBMITTALS: Refer to Section 01 33 00 for procedures.
- A. **Layout Shop Drawings:** If requested by Owner and/or Architect submit showing dimensioned layout of all seams, location of dye lot changes, and details for binder bars. Approval does not relieve the Contractor of responsibility for the satisfactory installation of carpet.
  - B. **Samples:**
    - 1. Preliminary Samples: Obtain Owner's color and pattern instructions and submit nominal 6" square Samples accordingly for approval. Include 12" lengths of binder bars in designated colors.
    - 2. Master Samples: After preliminary approval, submit three labeled minimum 27" square Samples from each dye lot of carpet required for the Work. Samples shall demonstrate that dye lots acceptably match and there will be no apparent color change between carpet pieces of different dye lots.
  - C. **Sample Installations:** Prepare as many Sample installations as are required for approval. Use preparation techniques, installation materials conforming to approved submittals, and installation methods proposed for the Work. Owner will closely examine installations for workmanship, appearance, alignment and preservation of carpet pattern, non-detectability of seams when viewed from any direction or distance at the height of a standing or sitting person, and freedom

from manufacturing or installation defects of any kind. Finally approved Sample installations establish the quality required for all carpet installations, shall be identified and recorded, and shall remain in place. Sample installations are required for:

1. All carpet in one apartment as designated by Owner.

**D. Product Data:** Submit the following:

1. Carpet manufacturer's published technical data fully describing all carpet materials, construction, and recommended installation directions.
2. Technical data and usage instructions for each adhesive and sealer material.
3. Carpet manufacturer's published instructions for maintenance care, cleaning, and repair of carpet (5 copies).

**E. Certificate:** Submit a certificate from the carpet manufacturer that materials supplied comply with fire hazard resistance standards specified.

**F. Maintenance Materials:** Owner will examine carpet scraps and select those to be retained for maintenance purposes. Burlap wrap selected scraps and deliver to Owner.

1.04 **PRODUCT DELIVERY, STORAGE AND HANDLING:** Deliver materials in original unbroken packages, containers, or bundles bearing name of manufacturer, complete material identification, brand, and grade. Store in dry ventilated locations. Handle by methods that prevent damage, soiling, and contamination. On delivery of carpet material, bale ticket on each roll shall be recorded by Contractor and delivered to Owner.

1.05 **JOB CONDITIONS:**

**A. Ventilation and Temperature:** Verify that areas to be carpeted are ventilated to remove fumes from installation materials, and areas are within temperature range recommended by the various material manufacturers for installation conditions.

**B. Protection:** Keep traffic and personnel off carpet until at least 12 hours after installation. Cover carpet with heavy non-staining kraft paper or equivalent in areas where Work of other trades is to be performed and passage areas. Protect carpet from damage or soiling. Keep protection in place until ready for final clean-up operations.

1.06 **WARRANTY:** Refer to Section 01 78 00. Furnish a written warranty to Owner for one year covering defects in materials or workmanship. Include trimming, relaying, restretching, or replacement as necessary, at no cost to Owner.

**PART 2 - PRODUCTS**

2.01 **SUBSTITUTIONS:** Refer to Drawings for product and finish selections. Use products of only one manufacture throughout for each specialty item specified unless otherwise noted or approved. Refer to Section 01 60 00 if required by the Owner proposed substitute carpet shall be subjected to analysis by a recognized testing laboratory, such as the Pittsburg Testing Lab, to determine the quality of proposed materials. Request for substitution shall be accompanied by a list stating the characteristics which differ from those of carpet specified with supporting data to justify the differences. If Owner wants substituted material, Owner shall pay for testing deemed necessary, if substitution is mandated by conditions under Contractor's control, then Contractor shall pay for testing.

2.02 **CARPET MATERIALS:**

- A. Identification and Labeling:** Carpet shall bear a positive identification by a label service showing the carpet fire hazard classification as determined by a nationally recognized testing laboratory such as UL.
- B. Test Standards:** Carpet shall pass following tests and be so labeled:
1. Department of Commerce FF-1-70 Methamphetamine Pill Test or Radiant Panel Test (RPT), Critical Radiant Flux (CRF) of 0.507 watts per sq. cm.
  2. Flame spread of 75 or less per ASTM E84 and flame propagation of 4.0 or less as determined by UL 992 Chamber Test, including cushion.
  3. Average corrected smoke density of 450 or less as determined by NBS Smoke Density Chamber Test.
  4. AATCC Static-Test under 3500 volts.
  5. Tuft bind 20 pounds minimum per ASTM D1335.
  6. Edge ravel test per ASTM D1335.
  7. Backing: Polypropylene
- C. Carpet Width:** Minimum 12-foot roll width, except carpet for corridors may be of narrower width as approved.
- D. Carpet:** Provide carpet(s), types as scheduled on drawings or as selected by Architect/Owner.
- E. Cushion:** Provide 1/2" 6 lb. rebound cushion as scheduled, shown or required by the Carpet manufacturer.

2.03 **RELATED MATERIALS:** Use following adhesive and seam sealer unless other products are specifically recommended and named in carpet manufacturer's technical data.

- A. Floor Adhesive:** MAPEI Ultrabond Eco 185 Carpet Adhesive or equal product that is approved by Cal Green with Low VOC and Formaldehyde Free Adhesive.

- B. Seam Sealer:** Commercial Carpet Corp. "Adhere Seam Sealer".
- C. Leveling Compound:** Latex type compound, Merkote Products "Mer-Ko Underlay L" or Crossfield Products "Dex-O-Tex G-26 Underlayment". Verify that the compound is compatible with floor adhesive.
- D. Binder Bars:** Aluminum tackless binder edging by B&T Metals, Roberts Company, or Trimedge.
- E. Tack Strips:** Standard type for use on concrete.

### **PART 3 - EXECUTION**

- 3.01 **INSPECTION:** Verify conditions as specified in Section 01 45 00. The Contractor and carpet installer shall inspect concrete floor slabs prior to start of carpet installation and shall report to Owner and/or Architect, in writing, all conditions which will adversely affect installation of carpeting. Do not begin carpet installation until all reported conditions are corrected.
- 3.02 **PREPARATION:** Do not start preparation until concrete floor slabs are at least 60 days old.
  - A. Cleaning and Drying:** Clean slabs of oil, grease, waxes, curing compound, dust, dirt, debris, paint, and other deleterious substances. Verify that concrete is dry with electronic tester or sealed rubber-mat test, number of tests as needed to ensure that slabs are dry but at least one test per floor and for every 2500 square feet of floor area. Allow slabs showing excessive moisture to dry and re-test until dried to tolerance allowed by floor adhesive manufacturer. Use a commercial vacuum cleaner to remove dust and dirt. Damp mop to remove dust that may remain after first vacuuming, allow surface to dry, and again vacuum; repeat the procedure if necessary to eliminate all dust. Do not use oiled or chemical treated sawdust or any similar product for dust removal.
  - B. Leveling:** All floor slabs shall be true to level and plane within a tolerance of 1/8" in 10-feet. Test floor areas both ways with a 10-foot straightedge and repair high and low areas exceeding allowable tolerance. Remove high areas by power sanding, stone rubbing or grinding, chipping off and filling with leveling compound, or equivalent method. Fill low areas with leveling compound. Repair and level the surfaces having abrupt changes in plane, such as trowel marks or ridges, whether or not within the allowable tolerance. Again clean areas where repairs are performed.

### 3.03 CARPET INSTALLATION:

- A. General:** Install carpet rolls in each dye lot in the number sequence furnished by manufacturer. Roll out carpet in one direction and do not reverse direction at any locations. Align carpet with centerline of room or space, and adjust at edges for wall variations.
- B. Color Control:** Plan dye lot change locations to eliminate shading problems and rejection. Use only one dye lot for each area of the building unless otherwise approved; if more than one dye lot is used, obtain prior approval of color match between dye lots.
- C. Carpet Runs:** Install carpet in one-piece lengths between permanent walls unless otherwise approved. Install corridor carpet in one-piece sizes for full length and width, cross seaming only where corridors change direction.
- D. Laying and Seaming:** Follow highest quality professional installation procedures outlined by the National Association of Floor Covering Installers and the carpet manufacturer's directions as to workmanship. Cut carpet for seams between tuft rows by methods that prevent damage to tufts or loops, prevent edge ravel, and preserve uniform tuft row alignment and spacing on both sides and across seams. Lay carpet with tuft or loop rows in straight lines both ways, free of offsets, waviness, distortion, or misalignment. Cut seam edges straight and square with backing. Trim carpet at walls, columns, and penetrations for a compressed fit.
- E. Doorways:** Extend carpet into doorways without piecing in and seam to carpet on other side of door under door centerline except where metal thresholds occurs; no small filler pieces of carpet will be permitted at doorways.
- F. Adhesive Installation:** Do not stretch carpet during installation. Use notched trowel directed by adhesive manufacturer. Evenly spread adhesive free of excess or thin areas. Place and roll carpet within "open time" of adhesive. Coat all seam edges with seam sealer (not floor adhesive) applied to bottom of face yarn and entire edge of backings, and produce tight compressed seams free of gaps, peaking, or ridging. Roll or broom carpet towards open seams free of gaps, peaking, or ridging. Roll or broom carpet towards open seams or edges to expel trapped air and obtain full embedding in adhesive.
- G. Cushioned Installation:** Install tack strips along walls and vertical surfaces. Install cushion with close joints arranged to avoid carpet seams by 12" or more. Secure cushion with adhesive along all edges and joints, and at 24" centers both ways in the field. Hand sew seams with waxed or polyethylene carpet thread and reinforce with tape. Stretch carpet tight in correct alignment, secure to tack strips, and trim under base.

- H. Binder Bars:** Provide bars at all edges of carpets not abutting walls or other construction, securely fastened in place. Precisely align splices and tightly miter angles.
- 3.04 **CLEAN-UP:** As each area is completed, clean up all dirt and debris, remove spots and soiling with proper cleaner, trim off loose threads with sharp scissors, and vacuum entire area clean.
- 3.05 **COMPLETED INSTALLATIONS:** Clean and free of loose areas, defective or apparent seams, scallops, puckers, ripples, distortion, or other defects, and matching the quality of the approved Sample installation. All carpet installations not complying with these requirements, as determined by Architect, will be rejected. Contractor shall remove rejected carpeting and install new conforming carpeting at no extra cost to Owner.

END OF SECTION

**SECTION 09 91 00**

**PAINTING**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide and perform painting, complete as indicated, specified and required.

**A. Work In This Section:** Principal items include:

1. Submittals.
2. Preparation of surfaces.
3. Painting of interior surfaces, except as otherwise specified.
4. Painting of exterior surfaces, except as otherwise specified.

**B. Related Work Not In This Section:**

1. Shop prime coats and factory finishes.
2. Painting specified as Work of other Sections.
3. Calking and sealants.

**C. Surfaces Not To Be Painted:**

1. Non-ferrous metal work (other than zinc-coated surfaces) and plated metal, unless particular items are specified to be painted.
2. Integrally colored concrete block.
3. Integrally colored plaster.
4. Exterior concrete walls and surfaces.
5. Surfaces concealed in walls and above solid ceilings.
6. Non-metallic walking surfaces unless specifically shown or specified to be painted.
7. Factory finished surfaces.
8. Ceramic tile and plastic surfaces.
9. Resilient flooring.
10. Surfaces indicated not to be painted.
11. Surfaces specified to be finish painted under other Sections.

1.02 SUBMITTALS: Refer to Section 01 33 00 for procedures.

**A. List of Paint Materials:** Prior to submittal of Samples, submit a complete list of proposed paint materials, identifying each material by manufacturer's name, product name and number, including primers, thinners, and coloring agents, together with manufacturers' catalog data fully describing each material as to contents, recommended usage, and preparation and application methods. Identify surfaces to receive various paint materials. Do not deviate from approved list.

- B. Color Samples:** Prior to preparing Samples, obtain Owner's color and gloss selections and instructions. Using materials from approved list, prepare and submit 8-1/2" by 11" Samples of each complete opaque paint finish.
- C. Natural or Stain Finish Samples:** Prepare Samples on 12"squares of the same species and appearance of wood as used in the Work.
- D. Maintenance Materials:** Provide Owner with unopened, clearly labeled containers of each type and color of paint used. Provide a minimum of 2% of quantities actually used, but not less than one (1) gallon each.

1.03 JOB CONDITIONS:

- A. Protection:** Protect all painting while in progress and cover and protect adjoining surfaces and property of others from damage. Exercise care to prevent paint from contacting surfaces not to be painted. During painting of exterior work, cover windows, doors, concrete, and other surfaces not to be painted.
- B. Examination of Surfaces:** Examine surfaces to be painted or finished under this Section and verify satisfactory condition; as specified in Section 01 45 00, notify Owner in writing of unsatisfactory surfaces. Application of first coat of any finishing system constitutes acceptance of the surface by Painting Subcontractor. This does not relieve the Contractor from proper preparation of surfaces.
- C. Weather Conditions:** Apply paint to clean, dry, prepared surfaces. Do not apply exterior paint during rainy, damp, foggy, or excessively hot and/or windy weather. Arrange for temporary heat and ventilation required for interior painting.
- D. Precaution:** Place oily rags and waste in self-closing metal containers, removed from site at the end of each day. Do not let rags and waste accumulate.
- E. Coating Maintenance Manuel:** Upon conclusion of the project, the Contractor or paint manufacturer/ supplier shall furnish a coating maintenance manual, such as Sherwin-Williams "Custodian Project Color and Product Information" report or equal. Manual shall include an Area Summary with finish schedule, Area Detail designating where each product/ color/ finish was used, product data pages, Material Safety Data Sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.

**PART 2 - PRODUCTS**

- 2.01 MATERIALS: Refer to Drawings for product and finish selections. Use the paint products of only one paint manufacturer unless otherwise specified or approved. In any case, primers, intermediate, and finish coats in each painting system must be products of

same manufacturer, including thinners and coloring agents, except materials furnished with prime coat by other trades. To the maximum extent feasible, factory mix each paint material to correct color, gloss, and consistency for application. The Sherwin- Williams Paint Company products specified designate intended types and qualities. Furnish paints from the following manufacturer. Refer to Section 01 60 00 regarding substitutions:

- 2.02 All materials used shall conform to the CALGreen code standards
- 2.03 Provide manufactures documents to verify that all products conform to the VOC limits established by the CALGreen code.

### **PART 3 - EXECUTION**

- 3.01 **WORKMANSHIP:** Apply painting materials in accordance with manufacturer's instructions by brush or roller; spray painting is not allowed without specific approval in each case. Apply each coat at the proper consistency, free of brush or roller marks, sags, runs, or other evidence of poor workmanship. Do not lap paint on glass, hardware, and other surfaces not to be painted; apply masking as required. Sand between enamel coats.
- 3.02 **PREPARATION:** Properly prepare surfaces to receive finishes.
  - A. Concrete:** Fill cracks, holes, and other blemishes with portland cement patching plaster or a stiff paste mixed of finish paint and fine sand, finished to match adjoining surface. Remove glaze by sanding, wire brushing, or light brush-off sandblasting. Neutralize alkali conditions according to paint manufacturer's directions. Dry the surfaces to receive breathing type latex paints at least two weeks, free of visible moisture. Dry the surfaces to receive oil, alkyd, or epoxy based paint until moisture content does not exceed 8% when tested with an electronic moisture-measuring instrument.
  - B. Masonry:** Repair minor holes and cracks with a stiff paste of finish paint and fine sand or vinyl type block filler. Report major or unsightly defects to the Owner for correction. Neutralize all alkali and efflorescence according to paint manufacturer's directions.
  - C. Exterior Plaster:** Fill hairline cracks with portland cement patching material; report larger cracks to Owner for correction. Test and ensure plaster is sufficiently dry to receive the paint finish.
  - D. Gypsum Wallboard:** Touch-up minor defects with spackle, sanded smooth and flush. Report other defects as specified.
  - E. Shop Coated Metal:** Degrease and clean of foreign matter. Clean and spot paint field connections, welds, soldered joints, burned, or abraded portions with same material used in shop coats. After complete hardening, sand entire surfaces for coat to follow.

- F. Uncoated Ferrous Metal:** Degrease and clean of dirt, rust, mill scale, and other foreign matter using rotary brushes, solvent, or sandblasting. Remove pits and welding slag, and clean surfaces to bright metal before priming. Apply metal primer not more than three hours after preparation.
- G. Galvanized Metal:** Degrease and clean of foreign matter. Apply specified pretreatment, and immediately apply primer paint.
- H. Enameled Woodwork:** Contractor shall not prime any woodwork that comes to Work pre-primed. Sand smooth with grain and dust clean. All wood not Pre-primed shall be primed, putty all nail holes, cracks, or other defects with putty matching color of finish paint. Cover knots and sappy areas with shellac or approved knot sealer. Sand each base coat smooth when dry.
- I. Transparent Finished Woodwork:** Sand smooth with the grain and dust clean. Repair all defects with filler tinted to match stain or wood color, as required, after first coat of sanding sealer and remove all smears.
- J. Fixtures, Equipment, and Hardware Items:** Cooperate with other trades and coordinate removal of fixtures, equipment, and hardware as required to perform painting. Items to be removed include, without limitation: signs and graphics; switch and receptacle plates; escutcheons and like plates; all surface-mounted equipment; free-standing equipment blocking access; grilles and louvers at ducts opening into finished spaces; and other items as required and directed.
- K. Surfaces Not Mentioned:** Prepare surfaces according to recommendations of the paint manufacturer's and as approved.

3.03 COATS AND COLORS: The number of paint coats specified to be applied are minimum. Ensure acceptable paint finishes or uniform color, free from cloudy or mottled areas and evident thinness on arises. "Spot" or undercoat surfaces as necessary to produce such results. Tint each coat a slightly different shade of finish color to permit identification. Conform to approved Samples. Obtain approval of each coat before applying next coat; otherwise apply an additional coat over entire surface involved at no additional cost to Owner.

3.04 EXTERIOR PAINTING:

- A. Concrete & Cement Fiber Siding:**
  - 1st Coat: A24W8300 Loxon Concrete & Masonry Primer Sealer
  - 2nd Coat: A-100
  - 3rd Coat: A-100
- B. EPS Items:**
  - 1st Coat: A24W8300 Loxon Concrete & Masonry Primer Sealer

2nd Coat: A-100  
3rd Coat: A-100

**C. Plaster:**

1st Coat: A24W8300 Loxon Concrete & Masonry Primer Sealer  
2nd Coat: A-100  
3rd Coat: A-100

**D. Concrete Block Masonry:**

1st Coat: No Crossover  
or B42W46 Heavy Duty Block Filler  
2nd Coat: A-100  
3rd Coat: A-100

**E. Metal - Ferrous:**

1st Coat: B66-310 Series, ProCryl Universal Primer  
2nd Coat: B53 Series, Pro Industrial WB Alkyd Urethane Acrylic  
3rd Coat: B53 Series, Pro Industrial WB Alkyd Urethane Acrylic

**F. Metal - Galvanized:** Treat with SC-ME 01-1 METAL CLEAN AND ETCH before priming. Or you can use DTM Wash Primer B71Y1

1st Coat: B66-310 Series, ProCryl Universal Primer  
2nd Coat: B53 Series, Pro Industrial WB Alkyd Urethane Acrylic  
3rd Coat: B53 Series, Pro Industrial WB Alkyd Urethane Acrylic

**G. Wood - Opaque Paint:**

1st Coat: B42W8041 Exterior Latex Wood Primer  
2nd Coat: A-100  
3rd Coat: A-100

**H. Wood - Stain Finish:** As selected. Woodscapes Exterior Acrylic Solid Color Stain, A15 Series or Woodscapes Exterior Polyurethane Semi-Transparent Stain, A15T5

3.05 INTERIOR PAINTING: Provide finishes as scheduled on Drawings or directed, gloss of finishes as scheduled or, where not scheduled, as designated by the Architect. Enamel for finish shall be of the following glosses:

Gloss Enamel (70+ units at 60°) B53 Series, Pro Industrial WB Alkyd Urethane Acrylic

Gloss Enamel (65+ units at 60°)	A77 Series, Solo 100% Acrylic
Semi-Gloss Enamel (40-50 units at 60°)	B53 Series, Pro Industrial WB Alkyd Urethane Acrylic
Semi-Gloss Enamel (35-45 units at 60°)	A76 Series, Solo 100% Acrylic
Semi-Gloss Enamel (25-35 units at 60°)	B31-2600 Series, ProMar 200 Zero VOC
Eggshell Enamel (10-20 units at 85°)	B66-660 Series, Pro Industrial Acrylic
Eggshell Enamel (15-20 units at 85°)	A75 Series, Solo 100% Acrylic
Eggshell Enamel (5+ units at 60°)	B20-2600 Series, ProMar 200 Zero VOC
Low Sheen (0-5 units at 60°)	B24-2600 Series, ProMar 200 Zero VOC

**A. Flat - Drywall:**

1st Coat: B28W2600, ProMar 200 Zero VOC Primer  
2nd Coat: ProMar 200 Zero VOC

**B. Flat - Concrete and Plaster:**

1st Coat: B51W450, Multi-Purpose Int./ Ext. Latex Primer  
2nd Coat: ProMar 400 Zero VOC or ProMar 200 Zero VOC  
3rd Coat: ProMar 400 Zero VOC or ProMar 200 Zero VOC

**C. Flat - Concrete Block Masonry:**

1st Coat: B42W46 Heavy Duty Block Filler  
2nd Coat: ProMar 400 Zero VOC or ProMar 200 Zero VOC

**D. Enamel - Concrete and Plaster:**

1st Coat: B51W450, Multi-Purpose Int./ Ext. Latex Primer  
2nd Coat: Enamel, gloss as scheduled or designated Solo 100% Acrylic  
3rd Coat: Enamel, gloss as scheduled or designated Solo 100% Acrylic

**E. Enamel - Concrete Block:**

1st Coat: B42W46 Heavy Duty Block Filler  
2nd Coat: Enamel, gloss as scheduled or designated Solo 100% Acrylic  
3rd Coat: Enamel, gloss as scheduled or designated Solo 100% Acrylic

**F. Enamel - Drywall:**

1st Coat: B28W2600, ProMar 200 Zero VOC Primer  
2nd Coat: ProMar 200 Zero VOC Interior Latex

**G. Enamel - Wood:**

1st Coat: B28W2600, ProMar 200 Zero VOC Primer  
2nd Coat: ProMar 200 Zero VOC Interior Latex or use Solo 100%  
Acrylic.

**H. Stain and Varnish:**

1st Coat: MINWAX Wood Filler  
2nd Coat: MINWAX Stain  
3<sup>rd</sup> Coat: MINWAX Sanding Sealer  
4<sup>th</sup> Coat: MINWAX Semi Gloss Polyurethane  
5th Coat: MINWAX Semi Gloss Polyurethane

**I. Stain and Lacquer: GEMINI Coatings**

**1. System for White-Stained and Other Light Colored Wood Stains**

1st Coat: VALSPAR, WOOD FILLER VSP 0109  
2nd Coat: Gem Glo- Wiping Stain, Low VOC 6707  
3rd Coat: 200-0228, 275 VOC Water Clear Sealer  
4th Coat: 500-0277, 275 VOC Water Clear Semi Gloss Lacquer  
5th Coat: 500-0277, 275 VOC Water Clear Semi Gloss Lacquer

**2. System for Dark Colored Wood Stains**

1st Coat: VALSPAR, WOOD FILLER VSP 0109  
2nd Coat: Gem Glo- Wiping Stain, Low VOC 6707  
3rd Coat: 200-0227, 275 VOC High Build Sealer 2750  
4th Coat: 500-0281, 275 VOC High Build Semi Gloss Lacquer 2756  
5th Coat: 500-0281, 275 VOC High Build Semi Gloss Lacquer 2756

**J. Flat - Metal:** Treat galvanized metal with SC-ME 01 METAL CLEAN AND ETCH before priming, or you can use DTM Wash Primer B71Y1.

1st Coat: B66-310 Series, ProCryl Universal Primer  
B66-310 Series, ProCryl Universal Primer  
2nd Coat: B53 Series, Pro Industrial WB Alkyd Urethane Acrylic

**K. Enamel - Metal:** Treat galvanized with SC-ME 01-1 METAL CLEAN AND ETCH before priming, or you can use DTM Wash Primer B71Y1.

1st Coat: B66-310 Series, ProCryl Universal Primer  
B66-310 Series, ProCryl Universal Primer

2nd Coat: Enamel, gloss as scheduled or designated B53 Series, Pro Industrial WB Alkyd Urethane Acrylic

3.06 MISCELLANEOUS PAINTING:

- A. **Duct Interiors:** Paint with flat black fire-retardant paint to extent visible through grilles and registers in finished rooms and spaces.
- B. **Fire Extinguisher and Fire Hose Cabinets:** Apply 2 coats of paint finish, inside and out, matching finish and color of adjoining areas, unless otherwise noted or directed.
- C. **Color Coding:** In mechanical and electrical equipment rooms and spaces, paint all ducts, piping, conduit, equipment, and machinery, except such items having a complete factory finish, as specified for interior metal, colors as directed. Not more than 8 colors will be required.
- D. **Weatherstripping or Sound Seals:** Paint exposed metal surfaces to match the door frame, whether or not unfinished, furnished with factory prime coat, or factory treated for paint adhesion.
- E. **Mechanical and Electrical Work:** Carefully review Divisions 22,23,25 and 26 of the Specifications regarding painting performed there under and other painting required to be performed under this Section. Perform all painting of mechanical and electrical equipment and materials that are not expressly specified to be painted under Division 23 or 26, including required identification and color code painting, stenciling, and banding.
- F. **Miscellaneous:** For any items not specifically shown or specified that require a paint finish, apply 3 coats of paint as directed.

3.07 CLEANING AND TOUCH-UP WORK: Make a detailed inspection of paint finishes after all painting is completed, remove splatterings of paint from adjoining surfaces, and make good all damage that may be caused by such cleaning operations. Carefully touch-up all abraded, stained, or otherwise disfigured painting, as approved, and leave entire painting in first-class condition.

END OF SECTION

**SECTION 10 00 00**

**BUILDING SPECIALTIES**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Provide building specialties complete as indicated, specified, and required.

**A. Work In This Section:** Principal items include:

1. Fire extinguishers and cabinets.
2. Signs.
3. Knox box.
4. Pre-Engineered Canopy over gas area

**B. Related Work Not In This Section:**

1. Concrete substrates.
2. Metal fabrications.
3. Finish carpentry.
4. Plumbing.

1.02 SUBMITTALS: Refer to Section 01 33 00 requirements for procedures.

**A. Shop Drawings and Samples:** Submit for various items as specified hereinafter. Shop materials, finish, characteristics, construction and fabrication details and procedure, layout and erection diagrams, methods of anchorage to building construction, templates for backing or anchorage, and other criteria.

**B. Product Data:** Submit catalog data for the standard manufactured items and as applicable to shop-fabricated or shop-assembled items.

**PART 2 - PRODUCTS**

2.01 MANUFACTURE: Use products of only one manufacture throughout for each specialty item specified unless otherwise noted or approved.

2.02 FIRE EXTINGUISHER AND CABINETS: Fire extinguisher cabinets and equipment specified are as supplied by Potter-Roemer, Cerritos, CA. (310) 404-3753. Fire Extinguisher Cabinets shall be Series DC-1704-F for fully recessed and DC-1754-F for surface mounted or as selected by Architect. Install as indicated or required by Drawings. All cabinets shall be equipped with a rated, fully charged extinguisher. Cabinet finish shall be a paint finish, color as selected by Owner and/or Architect.

- 2.03 **SIGNS:** Fabricate and provide signs as required for Project under a Design Build application. Provide Shop Drawings for Architects approval prior to fabrication. Contracted Grade 2 Braille shall be used whenever Braille symbols are specifically required. Dots shall be spaced 1/10" on center within each cell with 2/10" space between cells. Dots shall be raised 1/40" above background. Refer to CBC Building Code, Current Edition.
- 2.04 **KNOX BOX:**
- A. Manufacturer:** The products shall be by Knox Company, as required by local fire department standards (800/552-5669, [www.knoxbox.com](http://www.knoxbox.com)).
- B. Key Boxes:** Provide Knox-box 3200 Series, heavy-duty, high security key box with hinged door, complete with mounting kit with TGIC polyester powder coat finish.
1. Provide Model No. 3270 recessed Knox-Box, except use Model No. 3266 where specifically indicated to be surface-mounted version.
  2. Color to be chosen from full range of standard colors.
- C. Padlocks:** Provide Knox Padlocks 3700 Series, with heavy-duty steel body and weather resistant cover.
1. Provide model 3750, 3751, or 3752 as needed, based on hasp configuration, gate size, and fire department requirements.
  2. Provide ID labels for each unit.
  3. Confirm hasp fitting sizes to ensure proper shackle sizes.
- 2.05 **PRE-ENGINEERED CANOPY OVER GAS AREA:** Fabricate and install pre-engineered carports by Childers (713) 895-7350 Model "Arlington" with a 24" deep fascia, soffit below, 51'-4" long x 30'-0" wide x 24" deep x 15'-0" clear vertical clearance, or canopy system by another prior approved equal manufacturer. Carports shall consist of the following materials. The roof beams, deck and trim shall be pre-finished hot-dip galvanized steel conforming to ASTM A446, Grade D 50,000 psi yield, galvanizing shall conform to A525 G-90. Apply a factory applied finish in color(s) as selected by Architect. Columns to be square tubes conforming to ASTM A500, Grade B, columns shall be hot-dip galvanized after fabrication with a minimum zinc coating of 2 oz. per square foot. Provide samples of deck panels, fascia, and trim for Architects approval. Provide Shop Drawings for Architect's review prior to fabrication. Install carports in accordance with approved Shop Drawings and manufacturer's specifications. Verify final height in construction with Owner prior to fabrication.

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BUILDING SPECIALTIES  
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**PART 3 - EXECUTION**

3.01 INSTALLATION: Conform to the approved submittals and the various manufacturers instructions.

END OF SECTION

**SECTION 10 22 00**

**TOILET PARTITIONS**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide custom metal toilet partitions complete as indicated, specified, and required.

**A. Work In This Section:** Principal items include:

1. Custom mounted toilet partitions.
2. Wall-mounted urinal screens.

**B. Related Work Not In This Section:**

1. Toilet accessories.
2. Concealed backing or blocking in walls.

1.02 SUBMITTALS: Refer to Section 01 33 00 for procedures.

**A. Shop Drawings:** Submit Shop Drawings showing dimensioned layouts, the required location of backing in walls, connections to ceiling and wall supports, preparation and reinforcing of panels to receive various toilet accessories and grab bars, and erection diagrams.

**B. Product Data:** Submit catalog data for each hardware item and fitting.

**C. Samples:** Submit Samples of finish in designated colors as scheduled on drawings or as selected by Architect for approval prior to fabrication.

**D. Certificate:** Submit manufacturer's certificate attesting that, treatment, and finish provided conform to requirements specified and ADA requirements.

**PART 2 - PRODUCTS**

2.01 TOILET COMPARTMENTS: Rigidized Metal Corporation compartments, metals and 5WL finishes as scheduled on drawings or as selected by the Architect

**A. Construction:** As detailed on drawings, 1" finished thickness for doors, stiles, wall posts, and panels, with no hardware exposed on exterior compartments. Provide reinforced cutouts in partitions where required for toilet accessories. Provide concealed reinforcements for grab bar connections to panels, designed for at least 300 pound shear load.

- B. Hardware:** Provide hardware as selected by the Architect. Equip doors with continuous hinges, coat hook and bumper, latch bolt, and combination stop and keeper. Assemble compartments with continuous wall metal brackets matching hardware. Use theft-proof fasteners of matching materials. Provide U-shaped or loop type hardware at each side of door, and flip-over or sliding latch per CBC 1115B.3.1.4.5 for accessible stalls. Toilet stalls for disabled persons shall have slide bolt door latch, wire pulls both sides of the door and self closing hinges. Door hardware shall be mounted at 30” to 44” above finished floor. Disabled doors at front entry stalls shall have 32”, and side entry stalls shall have 34” minimum clear width when the door is open 90 degrees. Coat hook shall be installed at 48” maximum.
- C. Urinal screens:** Per drawings (5WL) textured toilet partition wall panel as Manufactured by Rigidized Metals Corporation. Same construction, thickness, and finish as partitions, 18" by 42" size unless otherwise indicated, installed with continuous metal brackets secured with matching machine screws into concealed backing.

### **PART 3 - EXECUTION**

- 3.01 **INSTALLATION:** Form and assemble work plumb, square, and in true plane without warp or wind, connections made tight and secure. Remove punctured or scratched material and provide conforming material. Leave the entire installation clean and free of oil, grease, handmarks, or other foreign matter, and with hardware adjusted for correct operation.

END OF SECTION

**SECTION 10 28 00**

**TOILET ACCESSORIES**

**PART 1 - GENERAL**

- 1.01 DESCRIPTION: Division 1 applies to this Section. Provide toilet accessories complete as indicated, specified, and required.
- 1.02 SUBMITTALS:
- A. **Shop Drawings:** If requested by Owner submit Shop Drawings showing installation details and required backing plate locations.
  - B. **Samples:** Submit such Samples as Owner and/or Architect may request, which will be returned to Contractor. Approved Samples may be installed in the Work.
  - C. **Maintenance (Attic Stock) Materials:** At completion, deliver (Attic Stock) materials to the Owner equal to three units of bathroom accessory packages.

**PART 2 - PRODUCTS**

- 2.01 MATERIALS: Refer to Drawings for product and finish selections. Accessories as scheduled, unless otherwise selected by Owner and/or Architect, stainless steel products of manufacturers as specified herein. Refer to Section 01 60 00 regarding substitutions.
- A. **Provide Bradley Series** as scheduled on drawings, install where indicated on drawings. Mirror quality 1/4" thick polished plate, ground edges, double-silvered, copper backed, and organic coating, bearing 15-year guarantee against silver spoilage. Provide stainless steel channels as scheduled on drawings and secure with adhesive supplied by mirror manufacturer.
  - B. **Common Areas:** All accessories shall be as indicated on drawings.
  - C. **Kitchen Areas:** As scheduled on drawings.

**PART 3 - EXECUTION**

- 3.01 INSTALLATION: Install accessories square, plumb, and level. Securely anchor by mechanical means only using stainless steel fasteners. Obtain required rough-in and installation templates. Exact locations shall be as indicated or directed by the Owner and/or Architect.

END OF SECTION

**SECTION 11 31 00**

**KITCHEN EQUIPMENT**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide kitchen equipment complete where required as indicated on Drawings.

**A. Work In This Section:** Principal items include:

1. Appliances as indicated on the Drawings.

**B. Related Work Not In This Section:**

1. Plumbing supply to equipment location.
2. Electric supply to equipment location.
3. Installation and final connection of appliances by Section 06 20 00.

1.02 QUALITY ASSURANCE: Conform to the following as applicable:

**A. Certification Labels:** Provide equipment which complies with standards and bears certification labels as follows:

1. Energy Ratings: Provide energy guide labels with energy cost analysis (annual operating costs) and energy information as required by Federal Trade Commission.
2. UL Standards: Provide equipment with UL labels.

**B. Uniformity:** Provide products of same manufacturer for each type of equipment required. The greatest extent possible, provide equipment by single manufacturer for entire project.

1.03 PRODUCT DATA: Submit manufacturer's specifications and installation instructions for each type of equipment, including data indicating compliance and requirements. Submit operating and maintenance instructions for each item of equipment. Provide product cuts for Owners approval prior to purchasing any equipment.

1.04 PRODUCT WARRANTIES: Submit manufacturer's standard written warranty for each item of equipment.

1.05 COLORS: Provide color(s) in as selected by Owner and/or Architect or shown or as scheduled on drawings. Wherever equipment by more than one manufacturer is installed in same place, provide units with color matching largest equipment item, unless otherwise indicated.

- 1.06 DATA SHEETS: Submit manufacturer's published data sheet indicating rough opening sizes, basic space requirements, and all utility requirements to Architect and/or Owner.
- 1.07 PRODUCT DELIVERY, STORAGE AND HANDLING: Deliver all equipment to the site in unopened factory sealed containers bearing printed name of manufacturer, keep container dry and undamaged.

## **PART 2 - PRODUCTS**

- 2.01 MANUFACTURE: Refer to Drawings for product and finish selections. Use products of only one manufacture throughout for each specialty item specified unless otherwise noted or approved. Use products of only Samsung or approved equal throughout for each specialty item specified unless otherwise noted on Attachment or approved equal.
- 2.02 EQUIPMENT: Specific product data such as model, manufacture, special features, colors, etc., to be provided and approved by Owner. Model numbers referenced are those manufactured. The list of equipment is as follows. All Models shall be “Energy Star”.
- A. **Kitchen Appliances/Equipment:** As indicated on drawings or as selected by Architect.

## **PART 3 - EXECUTION**

- 3.01 INSTALLATION: Comply with manufacturer's instructions and recommendations. Installation to be Work of Section 06 20 00 and shall include, but not be limited to the following:
- A. **Built-In Equipment:** Securely anchor units to supporting cabinetry or countertops with concealed fasteners. Verify that clearances are adequate for proper functioning and rough openings are completely concealed.
- B. **Free-Standing Equipment:** Place units in final locations after finishes have been completed in each area. Verify clearances are adequate for proper operation of equipment.
- C. **Utilities:** Refer to Divisions 23 and 26 for plumbing and electrical requirements.
- D. **Testing:** Test each item of equipment to verify proper operation. Make necessary adjustments.
- E. **Accessories:** Verify that accessory items required have been furnished and installed.

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KITCHEN EQUIPMENT  
11 31 00 - 3

3.02 CLEANING: Remove packing material from equipment items and leave units in clean condition, ready for operation.

END OF SECTION

**SECTION 12 36 00**

**GRANITE COUNTERTOPS**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Provide granite countertop items complete as indicated, specified, and required.

**A. Work In This Section:** Principal items include:

1. Submittals.
2. Aesthetic criteria.
3. Granite countertops.

**B. Related Work Not In This Section:**

1. Metal support system.
2. Countertop supports.
3. Rough and finish carpentry.

1.02 QUALITY ASSURANCE:

**A. Qualifications of Manufacturer:** Employ a manufacturer having not less than 5 years continuous operation in manufacturing stone materials of the required types. Obtain Owner and Architect's approval of manufacturer's qualifications prior to bidding. Submit Samples and data as Owner or Architect may require.

**B. Supervision:** Perform Work of this Section under supervision of a capable specialist superintendent.

1.03 STONE - AESTHETIC CRITERIA – INTERIOR:

**A. Stone:** Fabricator shall procure sufficient size and quantity of stone to satisfy the aesthetic criteria established herein; including a surplus to handle anticipated shipping, assembly and erection damage.

**B. Color Range:** A color range shall be established. The Owner and/or Architect shall sign and date those stone or blocks that are approved.

**C. Blending:** Blending shall be the responsibility of the fabricator, and production sequence and shipment shall be coordinated with the installer to facilitate assembly and sequence of erection.

- 1.04 **SUBMITTALS:** Refer to Section 01 60 00 and/or Owner for procedures. Submit complete Shop Drawings and Aesthetic Criteria in this Section for procedures. Obtain approval of all submittals prior to production manufacture of Stone.
- A. Shop Drawings:**
1. Granite Countertops: Submit Shop Drawings for each size and type of installation, coordinated to plumbing fixtures and supports.
- B. Samples:** Obtain Architect's instructions and examine the file Samples in Architect's office. Show range in quality, color, texture, and finish that will occur. Label Samples for full identification. Prepare and submit the following:
1. Two Sample of stone countertops at least 14" square.
  2. Cured Samples of joint grout in each required color.
  3. Cured Samples of joint sealants in each required color.
  4. Sample of thin-set method for stone installation.
  5. Such other Samples Architect may request.
- C. Product Data:** Submit the following:
1. Manufacturer's data and use instructions for latex admix.
  2. Manufacturer's data and proportioning instructions for mortar admix.
  3. Manufacturer's data and instructions for joint sealants.
- D. Site Sample:** Erect site Samples after approval of the above submittals, using stone from an approved layout submittal. Make modifications as are required for final approval. Installed stone shall match the finally approved site samples. Approved site Samples shall be recorded and may remain in place as a part of the Work if meeting all other requirements indicated and specified.
- 1.04 **SUPPLEMENTARY PARTS:** Provide and install all supplementary parts necessary to complete the work as described on the Drawings and herein specified, though not definitely shown or specified. All necessary design, engineering, anchorage assemblies, fasteners, clips, bracing necessary for the support and anchorage of the stone system to the base structure shall be provided by the Contractor.
- 1.05 **PRODUCT DELIVERY, STORAGE, AND HANDLING:** Carefully load and pack stone for shipment, using special care to prevent damage in transit. Do not use material that could cause discoloration or staining for blocking, packing, or strapping. At site, store material under cover on protective pads or timbers.

## **PART 2 - PRODUCTS**

- 2.01 **MANUFACTURE:** Refer to Drawings for product and finish selections. Use products of only one manufacture throughout for each specialty item specified unless otherwise noted or approved.

2.02 BASIC MATERIALS:

Portland cement:	ASTM C150, Type II, low alkali. Masonry cement is not permitted. Use only one brand.
Hydrated lime:	ASTM C207, Type S.
Mortar sand:	ASTM C144, not less than 4% passing No. 100 sieve uniformly graded from fine to coarse.
Joint sand:	ASTM C144, washed sharp sand, all passing No. 30 sieve.
Grout sand:	ASTM C404, natural, Size No. 1.
Mortar admix:	Sika Suconem Red Label, Anti-Hydro, or equal.
Grout admixes:	Sika Chemical Corp. GA Grout Aid, type as required; no substitution.
Latex mortar:	ANSI A118.4 (factory inclusion of aggregate is not required), one of the following, or equal: Mer-Krete Tile Setting Adhesive. Lat-A-Set of Pearsall Chemical Corp. Custom-Crete Custom Building Products. Tex-Crete Custom Building Products. Laticrete by Laticrete International.
Latex admix:	For joint grout, by same manufacturer as above latex mortar.
Color pigment:	Pure ground mineral oxides, non-fading, alkali and lime proof, factory packaged.
Reinforcing mesh:	ASTM A185 galvanized welded wire fabric, 4x4-W1.4 x W1.4, or equal of equivalent steel area for use where setting bed is more than 1-1/2" thick; galvanized welded steel wire mesh, 2" square mesh by 16 gage, or equal of equivalent cross-sectional steel area for thinner setting beds; 2" square mesh may be used throughout.
Water:	From domestic potable source.

2.03 STONE AND RELATED MATERIALS:

- A. **Granite Stone:** Provide stone countertops as scheduled on drawings. Install where indicated as selected by Architect, thickness consistent so that face of stack is flush with each other, secure in accordance with Code and as indicated on drawings as specified, required to meet requirements shown, all matching the approved Master Samples on file in the Architect's office.
- B. **Granite Countertops:** Make countertops in one-piece units unless otherwise shown or approved. Shop prepares to receive electrical access 2" black grommets and the plumbing fixtures approved for use under Division 25. Stone shall be as indicated on Drawings. Provide shop drawings regarding where electrical and plumbing cut-outs are for Architects approval prior to fabrication.

- C. **Spacers:** Polyvinyl chloride strips, stainless steel, or equivalent, not subject to damage by water or alkali in mortar or grout.
  - D. **Sealant:** Conforming to Section 07 90 00, colors as approved.
  - E. **Epoxy Adhesive:** Type supplied or recommended by stone manufacturer.
  - F. **Epoxy Joint Grout:** Color as selected and approved, fully waterproof type, as supplied or recommended by stone manufacturer.
  - G. **Stone Sealer:** Provide sealer as recommended by supplier/manufacturer.
- 2.04 ANCHORAGE MATERIALS: Standard product steel types, all galvanized in accordance with ASTM A123 unless otherwise approved by the Masonry Institute of America recommendations.

### **PART 3 - EXECUTION**

- 3.01 INSPECTION: Report to the Architect in writing all conditions that prevent or interfere with correct installation of Work of this Section, and do not install the Work of this Section until such adverse conditions are corrected; this does not relieve Contractor from the responsibility for proper preparation of the surfaces. Obtain actual site measurements and verify actual site conditions prior to fabrication of stone. Check that grounds, outlet and receptacle boxes, fixtures, and like fittings are in place and that chases or other openings in walls or backings are closed.
- 3.02 COUNTERTOPS (THIN-SET METHOD): Bed stone in epoxy adhesive and finish joints about 1/8" wide and fill solid with epoxy joint grout.
- 3.03 CLEANING: Clean stone with specified cleaner according to the cleaner manufacturer's instructions, rinse, and free of cleaning marks or smudges. Clean stone surfaces with brushes and water, and remove all mortar residue and other substances. Thoroughly scrub stone with the specified cleaner, rinse, and when the surface is completely dry apply two thin coats of sealer as recommended by the manufacturer. Leave surfaces clean and ready for acceptance.

END OF SECTION

**SECTION 14 21 00**

**HYDRAULIC ELEVATORS**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide hydraulic elevators complete, as indicated, specified, and required.

**A. Work In This Section:** Principal items include:

1. Hydraulic passenger elevators complete.
2. Submittals, tests, finishing, and related items as specified.
3. Maintenance service.

**B. Related Work Not In This Section:**

1. A legal hoistway, properly framed and enclosed, and including a pit of proper depth provided with ladder, sump pump, lights, and waterproofing, as required. Legal machine room, adequate for elevator equipment, including floors, trap doors, gratings, foundations, lighting ventilation and heat to maintain the room at an ambient temperature of 60°F. minimum to 100°F. maximum (95° maximum relative humidity, non-condensing.
2. Adequate supports and foundations to carry the loads of all equipment, including supports for guide rail brackets and machine beams or over-head sheaves (if furnished). If adjacent hoistway are utilized, divider beams at suitable points shall be provided for guide rail bracket support.
3. Dry pit reinforced to sustain normal vertical forces from rails and impact loads from buffer and cylinder.
4. Where access to the pit over 3'-0" in depth is by means of the lowest hoistway entrance, a vertical iron ladder entering 42" minimum above sill or access door.
5. Adequate support for sill angle across full width of hoistway at each landing. Vertical surfaces of entrance sill supports to be plumb, one above the other, and square with the hoistway. Finished floor and grout, if required, between door frames to sill line. For non-flush hoistways, adequate support for sill angle across full width of hoistway at each landing.
6. Finish floor to finish floor rise tolerance is +0" and -1".
7. Hoistway walls are to be designed and constructed in accordance with the required fire rating including where penetrated by elevator fixture boxes and to include adequate fastening to hoistway entrance assemblies. One front entrance wall, at the main landing, is not to be constructed until after all elevator material is located in the hoistway. If front walls are poured concrete bearing walls, and filled in after frames are set. Rough opening size to suit elevator contractor.

8. Temporary hoisting beam for a maximum net live load of 5000 lbs. must be removed before car is placed in operation.
9. Any cutting, including cutouts to accommodate hall signal fixtures, patching, and painting of walls, floors, or partitions together with finish painting of entrance doors and frames.
10. A fused disconnect switch or circuit breaker for each elevator per the National Electrical Code with feeder or branch wiring to controller. Size to suit elevator contractor.
11. A three (3) phase, three (3) wire electrical feeder system with an equipment grounding conductor terminating in the machine room. Size of the feeders and grounding conductor to suit elevator power characteristics.
12. A 120 volt, A.C., 15 amp, single phase power supply with fused SPST disconnect switch for each elevator, with feeder wiring to each controller for car lights.
13. Suitable light and convenience outlets in machine room with light switches located within 18" of lock jamb side of machine room door.
14. Convenience outlet and light fixture in pit with switch located adjacent to the access door.
15. Telephone instrument or means within the car for communicating or signaling to an accessible point outside the hoistway or central exchange system or approved emergency service; unless stated elsewhere in the specifications.
16. If intercom provided: Separate 120 volt, 15 amp, single phase power supply with fused SPST disconnect switch or circuit breaker with duplex outlet in the machine room, located as required for inter-communicating system power supply. Circuit to be arranged for feeding from the building emergency lighting supply if provided. Conduit and wiring for remotely located inter-communicating stations. (in Engineer's office, etc.).
17. A smoke detector system, located as required, with wiring from the smoke detector system, located as required, with wiring from the smoke detectors to the machine room for each group of elevators. Each group of elevators requires a set of contacts NORMALLY OPEN - COMMON - NORMALLY CLOSED (form C) from the smoke detector at the designated fireman's landing, and one set of contacts NORMALLY OPEN - COMMON - NORMALLY CLOSED representing all other smoke detectors in the system.  
Smoke detectors shall not be used to activate sprinklers in hoistways, machine rooms or machinery spaces or to disconnect the main line power supply.
18. Should operation of the elevators be required on emergency power, others are to provide an emergency standby power unit and means for starting it, and deliver to the elevator disconnect switches in the machine room, sufficient power to operate one or more elevators at a time at full rated speed. Provide a transfer switch for each feeder for switching from

- normal power to emergency power, and a contact on each transfer switch closed on normal power supply with two wires from this contact to one elevator controller.
19. Guarding and protecting the hoistway during construction. The protection of the hoistway shall include solid panels surrounding each hoistway opening at each floor, a minimum of 48" high. Hoistway guards to be erected, maintained and removed by others.
  20. All electric power for light, tools, hoists, etc., during erection as well as electric current for starting, testing and adjusting the elevator.
  21. Temporary Use of Elevators: Should any elevator be required for use before final completion, others shall provide without expense to elevator contractor, if required, temporary car enclosures, requisite guards or other protection for elevator hoistway openings, main line switch with wiring, necessary power, signaling devices, lights in car and elevator operators together with any other special labor or equipment needed to permit this temporary usage. The elevator contractor shall be reimbursed for any labor and material which is not part of the permanent elevator installation and which is required to provide temporary elevator service. In addition, the elevator contractor's temporary acceptance form shall be executed before any elevator is placed in temporary service, and the cost of power and operation, maintenance of the equipment and rehabilitation of equipment shall be paid by others.
  22. Locate the four inside corners of the elevator pit prior to erection in order that the cylinder well may be located and drilled.
  23. Provide clear access, including ramps or crane service when necessary for truck-mounted drilling equipment to be moved to and from the lowest floor level adjacent to the elevator hoistway prior to erection of the hoistway walls and overhead floor.
  24. To provide standard water connections and water, if required, for equipment and outlet line for discharging excess water while cylinder well is sunk.
  25. Removal of the excavation spoils deposited at the pit shall not be the responsibility of the elevator contractor.
  26. Furnish sand backfill for well hole as necessary at the elevator pit. To be installed in the well hole by the Elevator Contractor.
  27. Provide a hole in the pit floor slab of not less than 3'-0" square, located in accordance with the elevator contractor's instructions to accommodate installation of the cylinder whenever the pit floor is poured before the well is drilled. Patching of pit floor to be provided after cylinder is set.

**C. Definitions:**

1. ANSI Code: Terms pertaining to conveying systems are defined in the "Safety Code for Elevators, Dumbwaiters, and Moving Walks", ANSI A17.1 herein referred to as the ANSI Code.
2. Quantities: Where a device or portion of the elevator system is referred to

or specified in the singular number, such references shall apply to as many such devices or parts as are required to complete the work.

## 1.02 QUALITY ASSURANCE:

- A. Codes:** Conform to CBC Chapter 11B requirements for Passenger Elevators. Comply with all of the accessible requirements of CBC Section 3003, and Part 7, Title 24 California Code of Regulations. In addition to ANSI Code and be UL listed, the lifts shall conform to applicable laws, ordinances, rules, ADA regulations, and orders of all public agencies having jurisdiction of conveying systems, all of which are meant by the term "Code" herein. The ANSI Code shall govern except where such laws, ordinances, rules, regulations, or orders include more stringent requirements of 2024 CBC Building Code as follows:
- General - Size of cab and control locations are required to accommodate persons with disabilities. In buildings two or more stories in height, served by an elevator, or a building served by an elevator required by Chapter 11, or a building served by an elevator required for accessibility by Section 101.17, *all elevators provided shall accommodate a wheelchair.* (1116B.1.1)
  - The elevator shall be provided with a self-leveling device that will bring the car to the floor landings within a tolerance of ½ inch (12.7mm) under normal loading and unloading conditions. The clearance between the car platform sill and the edge of the hoistway landing shall be no greater than 1 ¼ inches (32mm). (1116B.1.2)
  - Minimum clear width for elevator doors shall be 36 inches. (1116B.1.4)
  - Doors closed by automatic means shall be provided with a door-reopening device that will function to stop and reopen a car door and adjacent hoistway door in case the car door is obstructed while closing. This device shall be capable of sensing an object or person in the path of a closing door without requiring contact for activation at a nominal 5 inches and 29 (12 7mm and 737mm) inches above the floor. (1116B.1.5)
  - Provide minimum acceptable time from notification that a car is answering a call (lantern and audible signal) until the doors of the car start to close using formula given in Section 1116B.1.6.
  - The minimum acceptable time for the doors to remain open shall be not less than five seconds. (1116B.1. 7)
  - The car inside shall allow for the turning of a wheelchair. The minimum clear distance between walls or between wall and door, excluding return panels, shall be not less than 80 inches by 44 inches (2032mm by 1372mm) for center-opening doors and 68 inches by 54 inches (1727mm by 1372mm) for side-slide opening doors. See 2024 CBC Figure 30-A. the centerline of elevator floor buttons shall be no higher than 54 inches (13 72mm) above the finish floor for side approach and 48 inches (1219mm) for front approach. (1116B.1.8)
  - Floor buttons shall be provided with visual indicators to show when each call is registered. The visual indicators shall be extinguished when each call is answered. (1116B.1.8)

- The emergency telephone handset shall be positioned no higher than 4 feet (1219mm) above the floor, and the handset cord shall be a minimum of 2 feet 5 (737mm) inches in length. If the telephone system is located in a closed compartment, the compartment door hardware shall be lever type conforming to the provisions of Section 1004.3. type of lock or latch. (1116B.1.8)
- Passenger elevator car controls shall have a minimum dimension Of 3/4 inch (19.1mm) and shall be raised 1/8 inch (3.2mm) plus or minus 1/32 inch (0.8mm) above the surrounding surface. (1116B.1.9)
- Control buttons shall be illuminated, shall have square shoulders, and shall be activated by a mechanical motion that is detectable. All control buttons shall be designated by a 5/8-inch-minimum (15.9mm) Arabic numeral, standard alphabet character, or standard symbol immediately to the left of the control button. A Braille symbol shall be located immediately below the numeral, character or symbol. A minimum clear space of 3/8 inch (9.5mm) or other suitable means of separation shall be provided between rows of control buttons. See Figure 30-B, 2024 CBC. The raised characters shall be white on a black background. (1116B.1.9)
- Controls and emergency equipment identified by raised symbols shall include, but not be limited to, door open, door close, "alarm bell, emergency stop and telephone. The call button for the main entry floor shall be designated by a raised star at the left of the floor designation. (1116B.1.9)
- The centerline of the hall call button, shall be within 42 inches (1067mm) of the floor. Buttons shall be a minimum of 3/4 inch (19.1mm) in size and shall be raised 1/8 inch (3.21mm) plus or minus 1/32 inch (0.8mm) above surrounding surface. Visual indication shall be provided to show each call registered an extinguished when answered. Objects adjacent to, and below, hall call buttons shall not project more than 4 inches (102mm) from the wall. (1116B.1.10)
- The minimum illumination at the car controls, threshold and the landing when the car and landing doors are open shall not be less than 5 foot-candles (54lx). (1116B.1.12)
- A visual and audible signal shall be provided at each hoistway entrance indicating to the prospective passenger the car answering the call and its direction of travel as follows: The visual signal for each direction shall be a minimum of 2-1/2 inches (64mm) high by 2-1/2 (64mm) wide and be visible from the proximity of the hall call button. The audible signal shall sound once for the up direction and twice for the down direction or of a configuration that distinguishes between up and down elevator travel. The centerline of the fixture shall be located a minimum of 6 feet (1829mm) in height from the floor of the lobby. The use of in-car lanterns, located in or on the car door jambs, visible from the proximity of the hall call buttons and conforming to the above requirements shall or will be acceptable. The use of arrow shapes is preferred for visible signals. (1116B.1.14)
- Passenger elevator landing jambs on all elevator floors shall have the number of the floor on which the jamb is located designated by raised Arabic numerals which are a minimum of 2 inches (51mm) in height and raised Braille symbols which conform to section 1117B.5.3 located at approximately 5 feet (1524mm) above tile floor on the jamb panels on both sides of the door so that

they are visible from within the elevator. Raised Braille symbols shall be placed directly to the left of the corresponding Arabic numerals. The raised characters shall be on a contrasting background. See Figure 30-B. (1116B.I.15)

- Passenger elevators shall be located near a major path of travel and provisions shall be made to ensure that they remain accessible and usable at all times the building is occupied. (1116B.I.16)

**B. Qualified Bidders:** Otis Elevators, Kone, Inc., Schlinder Elevators, and Thyssen-Krupp Elevator.

**C. Bidders Qualifications:** In the interest of unified responsibility the Elevator Contractor shall be one regularly engaged in the business of manufacturing, installing and servicing elevators of the type and character required by these specifications and he shall manufacture the entire (power unit, controller, traction equipment and all other parts of the equipment) including door operators and signal fixtures and he shall so state in his request for approval listing the items he manufactures. A representative of a national manufacturer produces the specified items. Prior written approval of the Architect is required (for contractors other than these listed) before quoting this project. Requests for approval will not be considered unless they are submitted 10 working days before bid date and are accompanied by the following information:

1. List of five similar installations arranged to show name of project, elevator capacity, speed travel and date of completed installation. The five elevators shall be located within 30 miles of the installation described herein.
2. Complete literature, performance and technical data describing the proposed equipment.
3. List of ten service accounts by building name, building manager or Owner in the City of Irvine or adjacent area.
4. Location of closest service office from which elevator will be maintained; closest parts inventory for this installation.

**D. Permits, Taxes and Licenses:** All applicable sales and use taxes, permit fees and licenses, as of the date bids are taken, shall be paid for by the Elevator Contractor. The Elevator Contractor shall be paid, as an addition to the contract price, any additional taxes, fees or other charges from the Purchaser or the Elevator Contractor on account thereof, by any law enacted after bids are taken.

1.03 SUBMITTALS: Refer to Section 01 33 00 for procedures.

**A. Shop Drawings:** Submit on fabricated equipment for which there is not sufficient literature and engineering information. Include details for entrances, control and wiring diagrams, system outlines, sleeve and rough-in information, bases and supported for equipment and machinery, and car and platform.

- B. Product Data:** Submit manufacturer's brochures and technical data covering items of equipment, devices, controls, signals, and car enclosure.
  - C. Samples:** Submit for car enclosure and hoistway entrance materials and finishes, exposed signal equipment finishes, and such other Samples Architect may request.
  - D. Certificate:** Submit the elevator system manufacturer's certificate stating that the installed elevator system conforms to requirements indicated and specified.
- 1.04 **JOB CONDITIONS:** Verify existing conditions as specified in Section 01 45 00.
- A. Equipment Selections:** Provide materials and equipment suitable for installation in the indicated shaft, pit spaces, and room without modifications of building structure. If materials or equipment requiring such modifications are proposed and approved, the Contractor shall bear all costs resulting from alterations or modifications, including compensation for the Architect's additional services if any, at no extra cost to the Owner.
  - B. Temporary Use of System:** Arrange between Contractor and Elevator Subcontractor at no extra cost to the Owner.
- 1.05 **WARRANTY:** Refer to Section 01 78 00. Furnish a warranty for one year, concurrent with the maintenance period.
- 1.06 **MAINTENANCE SERVICE:** The Elevator Contractor shall furnish maintenance and call-back service for a period of 12 months on each elevator after it is completed and placed in operation. This service shall consist of periodic examinations of the equipment, adjustments, lubrication, cleaning, supplies and parts to keep the equipment in proper operation, except such adjustments, parts or repairs made necessary by abuse, misuse or any other causes beyond the control of the Elevator Contractor. All work will be done by trained employees of the Elevator Contractor during 24 hour period.

## **PART 2 - PRODUCTS**

### 2.01 **OUTLINE OF EQUIPMENT:**

#### **A. Elevators:**

Type of Machine:	Hydraulic, valves in tank submerged pump motor
Load (Capacity):	3500 pounds or as indicated on drawings.
Car Speed:	150 Feet per Minute or as indicated on drawings.
Operation:	Selective Collective
Control:	Microprocessor
Rise:	Verify on Drawings
Number of Openings:	Verify on Drawings

Maintenance:	Twelve (12) Months
Power Supply:	208 volts, 3 phase, 60 hertz
Estimated Cab Weight:	As indicated by elevator requirements
Lighting Supply:	120 volts, 1 phase, 60 hertz
Car Enclosure:	Standard cab, unless otherwise indicated or selected by the Architect.
Clear Car Inside:	7'-0" wide x 6'-9" deep
Height Under Car Top:	10'-0"
Height Under Suspended Ceiling:	8'-0"
Type of Doors for Car and Hoistway Entrances:	1 speed, Doors at front as detailed on drawings.
Hoistway Entrance Door and Frame Finish:	Brushed Stainless Steel interior cab doors as selected by Architect and brushed stainless steel hollow metal exterior hoistway doors.
Hoistway Entrance and Car Opening:	3'-6" wide x 7'-0" high
Car Operating Panel:	One (1) at front, primary door side of cab
Signals:	Furnish Impulse design. Car buttons shall be mounted at 20° angles
Special Features:	Emergency lighting and alarm bell for cab. Automatic failure protection. Telephone cabinet. Electronic photo eyes. Braille symbols. Seismic provisions per Title 8 - California Code of Regulations. Low oil control. Oil viscosity control. Hoistway access switch. Oil line shutoff valve. Two speed fan. Visual and audible handicapped signals (double/single gong car mounted lanterns). Independent service keyed operation. Fire/Emergency return operation. Emergency Lowering Operation. Round penny tile flooring. Operating controls integrate with access control system.
Accessories:	Electronic passenger sensing device Emergency lighting and alarm bell Flooring by others Telephone cabinet (telephone not included) Pad hooks and protective blankets for all sides of the cab

- 2.02 **HYDRAULIC CONTROL SYSTEM:** The hydraulic control system shall be of compact design suitable for operation under the required pressure and it shall be mounted in the storage tank. The control valve will be a manifold type with up, down and check valve sections. A control section including solenoid valves will direct the main valve and control up and down starting, transition from full speed to leveling speed, up and down stops, pressure relief and manual lowering. Down speed and up and down leveling shall be controlled at the main valve sections. All of these functions shall be fully adjustable for maximum smoothness and to meet contract conditions. All control systems shall be pre-adjusted at the factory. The manual lowering feature shall permit lowering the elevator at slow speed in the event of power failure or for adjusting purposes.
- 2.03 **CONTROLLER:** A microprocessor-based controller shall be provided including necessary starting switches together with all relays, switches, solid state components and hardware required for operation, including door operation, as described herein. Operational control shall be by microprocessor. A three phase overload device shall be provided to protect the motor against overloading.
- 2.04 **LEVELING DEVICE:** The elevator shall be provided with an automatic leveling device which will bring the car to a stop within 1/4" of the landing level regardless of load or direction of travel. Landing level will be maintained within the leveling zone irrespective of the hoistway doors being open or closed.
- 2.05 **PUMP - (MACHINE):** The pump shall be a positive displacement screw type to give smooth operation and shall be especially designed and manufactured for elevator service. A screened inlet shall be provided at the suction end.
- 2.06 **MOTOR:** The motor shall be of the alternating current, polyphase squirrel cage induction type and shall be of a design especially adapted to hydraulic elevator requirements.
- 2.07 **STORAGE TANK:** The storage tank shall be constructed of steel and shall be provided with a removable cover containing a removable oil dip stick. The pump and submergible motor shall be mounted on a special reinforced isolation mount in the bottom of the tank. The control valve shall be mounted in the discharge line above the oil level and easily accessible from the top of the tank. An initial supply of oil sufficient for proper operation shall be provided.
- 2.08 **TANK HEATER:** A heater, thermostatically controlled, shall be provided in the storage tank to maintain proper oil temperature.
- 2.09 **MUFFLER:** A blowout-proof muffler shall be installed in the piping line.
- 2.10 **CYLINDER AND PLUNGER (JACK UNIT):** The cylinder shall be constructed of steel pipe of sufficient thickness and suitable for the operating pressure as prescribed by the latest revision of the ASME/ANSI A17.1 Code. The top of the cylinder shall be equipped with a cylinder head with a drip ring to collect any oil seepage as well as an

- internal guide ring and self-adjusting packing. The plunger shall be constructed of selected steel tubing or pipe of proper diameter machined true and smooth with a fine polished finish. The plunger and cylinder shall be installed plumb and shall operate freely with minimum friction.
- 2.11 WELL FOR CYLINDERS: The cylinder well, including casing if necessary, will not be provided by the elevator contractor.
- 2.12 PVC CYLINDER PROTECTION: Provide PVC Cylinder Protection when well is drilled into ground water, refer to Soils Report for ground water conditions.
- 2.13 SPECIAL CYLINDER PROTECTION: The cylinder of the jack unit shall be protected with two coats of special pipe mastic interspaced with a spiral wrapping of a special fiberglass wrap and a final outside wrap of heavy kraft paper. This special protection shall be equivalent to that known as Roskote mastic and Royston glas-wrap.
- 2.14 PIPING: Pipe of adequate size and thickness shall be installed between the pumping unit and the cylinder head. A shutoff valve shall be provided in the machine room for maintenance and adjusting purposes.
- 2.15 PLATFORM: The car platform shall consist of particle board backed with metal, bolted to a tubular steel frame. The sides and an approximately two-inch wide strip around the perimeter shall be coated with fire retardant paint. An aluminum threshold shall be provided. The platform shall be recessed 5/16" for flooring by others.
- 2.16 CARFRAME: A suitable carframe fabricated from formed or structural steel members shall be provided with adequate bracing to support the platform and car enclosure. The buffer striking plate on the underside of the carframe platform assembly must fully compress the spring buffer mounted in the pit before the plunger reaches its down limit of travel.
- 2.17 GUIDE RAILS: Steel elevator guide rails, erected plumb and securely fastened to the building structure, shall be furnished to guide the car.
- 2.18 SLIDING GUIDE SHOES: Sliding guide shoes shall be mounted on top and bottom of the carframe to engage the guide rails.
- 2.19 HOISTWAY OPERATING DEVICES: Normal terminal stopping devices shall be provided where required. When an emergency terminal stopping device is also required, it shall be furnished and the controller switches and circuitry arranged in accordance with the latest revision of the ASME/ANSI A17.1 Code.
- 2.20 PIT EMERGENCY STOP SWITCH: An emergency stop switch shall be so located in the pit as to be accessible from the pit access door.

- 2.21 **WIRING:** All wiring and electrical interconnections shall comply with the governing codes. Insulated wiring shall have flame retardant and moisture-proof outer covering, and shall run in conduit, tubing or electrical wireways. Traveling cables shall be flexible and suitably suspended to relieve strain on individual conductors.
- 2.22 **DOOR OPERATION:** Doors on the car and at the hoistway entrances shall be power operated by means of an operator mounted on top of the car. The motor shall have positive control over door movement for smooth operation. Each car door shall be provided with a protective device. Door operation shall be automatic at each landing with door opening being initiated as the car arrives at the landing and closing taking place after expiration of a predetermined adjustable time interval. Doors shall remain open for a time period sufficient to meet ANSI A117.1 Handicapped Requirements. Door close shall start after a minimum time, consistent with ANSI A117.1 Handicapped Requirements, from notification that a car is answering a hall call. The time interval for which the elevator doors remain open when a car stops at a landing shall be independently adjustable for response to car calls and response to hall calls. A car door electric contact shall prevent starting the elevator away from the landing unless the car door is closed. An approved positive interlock shall be provided for each hoistway entrance. The interlock shall prevent operation of the elevator unless all doors for that elevator are closed, and it shall keep the hoistway doors closed while the elevator is away from the landing. Emergency access to the hoistway as required by governing codes shall be provided.
- 2.23 **CAR DOOR PROTECTIVE DEVICE:** A proximity-type car door protective device having the following operation shall be furnished.
- A. When in Their Full Open Position,** the doors shall be unable to initiate closing if a person comes within the detection zone. The detection zone moves with the doors, so that if a person or object enters the zone after the doors have begun to close, the doors shall stop, then reverse to reopen. The doors shall reclose after a brief time. A passenger entering or leaving the cars shall not cause the doors to reopen unless the doors reach a predetermined proximity to the passenger.
  - B. After a Stop is Made,** the doors shall remain open for a time interval to permit passenger transfer, after which they shall close automatically. This time interval shall be less for a car call than for a hall call or a coincident car/hall call.
  - C. If There is Either a Hall Call** anywhere in the group or a car call in the car in question and the doors are prevented from closing for a fixed time period, the door protective device shall be rendered inoperative, a buzzer shall sound in the car and the doors shall close at approximately half speed. Normal door operation shall resume at the next landing reached by the car.
- 2.24 **CAR STALL PROTECTIVE CIRCUIT:** A protective circuit shall be provided which will stop the motor and the pump and return the car to its lowest landing in the event that the car, while traveling up, does not reach its designated landing within a

- predetermined time interval. This circuit shall permit a normal exit from the car but prevent further operation of the elevator until the trouble has been corrected.
- 2.25 EMERGENCY RETURN UNIT: A battery-powered Emergency Return Unit shall be provided. In the event of a power outage, the unit will return the car to the Plaza Deck Level, open the doors and shut down.
- 2.26 LOW OIL CONTROL: The system shall be capable of detecting a low oil condition in an up traveling or a parked car, and shall perform the following operations if this condition is detected.
- A. Upon Detection of a Low Oil Condition**, car calls shall be canceled and the car will stop. Upon expiration of a two-minute time begun when the car first began up traveling mode, the car shall proceed non-stop to the lowest landing. After the car has descended and sufficient oil has returned to the tank, the low oil control switch shall be automatically reset, so that after the car has stopped and performed a door operation, it shall be automatically returned to service.
- B. If the Low Oil Control Switch Operates** a second time, the same operation as just described shall occur, except that after stopping at the lowest landing and performing a door operation, the car shall shut down with doors closed until manual reset from the machine room is performed to return the car to normal service.
- 2.27 REVERSE PHASE RELAY: A reverse phase relay shall be provided on the controller.
- 2.28 REDUCED CURRENT STARTING: Reduced current starting shall be furnished which shall limit both the initial starting current and peak current drawn by the motor.
- 2.29 INSPECTION OPERATION: An enabling keyswitch shall be provided in the car operating panel to permit operation of the elevator from top of the car, for inspection purposes, and make car and hall buttons inoperative. On top of the car an operating fixture shall be provided containing continuous pressure "UP" and "DOWN" buttons, an emergency stop button, and a toggle switch. This toggle switch make the fixture operable and, at the same time, makes the door operator and car and hall buttons inoperable.
- 2.30 HOISTWAY ACCESS SWITCH: An enabling keyswitch shall be provided in the car operating panel to render all car and hall buttons inoperative and to permit operation of the elevator by means of an access keyswitch adjacent to the hoistway entrance at the access landing. The movement of the car away from access landing, other than the lower terminal, by means of the access keyswitch at the landing shall be limited in travel and direction to that as specified for the upper landing in the latest revision of the ASME/ANSI A17.1 Code.

- 2.31 **EMERGENCY CAR LIGHTING:** An emergency power unit employing a 12 volt sealed rechargeable battery and totally static circuits shall be provided that shall illuminate the elevator car and provide current to the alarm bell in the event of normal power failure. The equipment shall comply with the requirements of the latest revision of the ASME/ANSI A17.1 Code.
- 2.32 **APPLIED CAR OPERATING PANEL:** An applied car operating panel shall be furnished. Panel shall contain a bank of mechanical illuminated buttons marked to correspond to the landings served, and emergency call button, emergency stop button, door open and door close buttons and light and fan switches. The emergency call button shall be connected to a bell that serves as an emergency signal.
- 2.33 **HANDICAPPED MARKINGS:** Raised markings shall be furnished for the car buttons and car controls in compliance with the latest revisions of the ASME/ANSI A17.1 Handicapped Requirements.
- 2.34 **TELEPHONE CABINET:** A telephone cabinet shall be furnished in the return panel below the car buttons. Necessary wires shall be included in the car traveling cable. Communications equipment and connections to the building service system shall be furnished and installed by Owner. The telephone cabinet will be provided with a certificate frame.
- 2.35 **CAR POSITION INDICATOR:** A car position indicator shall be installed. The position of the car in the hoistway shall be shown by the illumination of the indication corresponding to the landing at which the car is stopped or passing.
- 2.36 **AUDIBLE SIGNAL (TO INDICATE PASSING OR STOPPING AT A FLOOR):** An audible signal shall sound in the car to tell a passenger that the car is either stopping or passing a floor served by the elevator.
- 2.37 **"IN CAR" DIRECTION LANTERNS:** Direction lanterns which is visible from the corridor shall be mounted in the car entrance jamb. When the car stops and the doors are opening, the lantern shall indicate the direction in which the car is to travel. A gong shall also be furnished on the car which will sound once for "UP" and twice for "DOWN" as the doors are opening.
- 2.38 **HALL BUTTONS:** At each terminal landing, a single push button shall be provided and at each intermediate landing, a button fixture shall be provided containing "UP" and "DOWN" push buttons. When a call is registered by momentary pressure on a landing button, that button shall become illuminated and remain illuminated until the call is answered.
- 2.39 **HALL POSITION INDICATOR:** A hall position indicator with a stainless steel faceplate, shall be installed at one or more landings. The position of the car in the hoistway shall be shown by the illumination of the indication corresponding to the landing at which the car is stopped or passing.

- 2.40 **DUPLEX COLLECTIVE OPERATION:** Operation shall be automatic by means of the car and landing buttons. Stops registered by the momentary actuation of the car or landing buttons shall be made in the order in which the landings are reached in each direction of travel after the buttons have been actuated. All stops shall be subject to the respective car or landing button being actuated sufficiently in advance of the arrival of the car at that landing to enable the stop to be made. The direction of travel for an idle car shall be established by the first car or landing button actuated. "UP" landing calls shall be answered while the car is traveling in the up direction and "DOWN" landing calls shall be answered while the car is traveling down. The car shall reverse after the uppermost or lowermost car or landing call has been answered, and proceed to answer car calls and landing calls registered for the opposite direction of travel. If all calls in the system have been answered, the car shall park at the last landing served.
- 2.41 **INDEPENDENT SERVICE:** A keyswitch shall be provided in the car operating panel which, when actuated shall cancel previously registered car calls, disconnect the elevator from the hall buttons and allow operation from the car buttons only.
- 2.42 **CAR ENCLOSURE:** Fabrication of the cab enclosure as indicated on drawings.
- A. Car Shell:** The car walls, other than entrance walls, shall each consist of a formed and welded steel frame, bolted in the corners to which the panels are secured.
  - B. Panels:** Each panel is faced and edged with plastic laminate as scheduled on drawings or as selected by the Architect.
  - C. Car Fronts:** Return panels with integral entrance columns of 16 gauge stainless steel with brushed finish shall extend from finished floor to underside of the fascia. The panel(s) shall be arranged for the mounting of applied "Advanced" fixtures. A full width fascia of 14 gauge stainless steel with brushed finish will be furnished over the return panels and car entrance.
  - D. Car Top:** The car top shall consist of a panel clad with sheet metal, matte which painted finish, arranged for a suspended ceiling and shall have a top emergency exit.
  - E. Suspended Ceiling:** The suspended ceiling shall consist of polished chrome panels. Lighting shall be four 40-watt fluorescent lamps recessed downlights with black coaxle baffles in the suspended ceiling panels, unless otherwise detailed on drawings or selected by the Architect.
  - F. Car Doors:** The car entrance shall be provided with door(s) with brushed stainless steel metal facing on the car side, extending around the leading door edges, and with integral hangers. The exterior side of door(s) will have a finish as selected by Architect.

- G. Handrails:** A handrail, 1-1/2" diameter stainless steel, returned at both ends shall be furnished for each side of the cab.
  - H. Exhaust Fan:** A fan will be mounted in the header above the entrance fascia and suspended ceiling.
  - I. Code:** The car enclosure shall comply with the latest revision of the ANSI/ASME A17.1 Code.
  - J. Protective Blankets and Hooks:** Provide protective blankets for each elevator for all sides of the cab including the hooks to hang them on.
- 2.43 PASSENGER HOISTWAY ENTRANCES: Provide hoistway entrances in accordance with Scope of Work sheet, and the following specifications:
- A. Frames:** Frames shall be hollow metal with paint finish as selected by Owner and/or Architect having a bolted construction for a one-piece unit assembly comprised of head and side jamb sections. All frames shall be securely fastened to sills and header and shall be of #14 gauge sheet material. The jamb width shall be 2".
  - B. Sills:** Provide extruded aluminum sills with non-slip wearing surfaces and grooves for door guides. Sills shall be supported on steel angles furnished and installed by the elevator contractor. The floor construction shall be designed to provide adequate support for the sill support angle across the full width of the hoistway.
  - C. Fascia Plates:** Fascia plates, fabricated from #14 gauge steel, shall be fastened to the header and the sill above.
  - D. Toe Guard:** A toe guard, fabricated from #14 gauge steel, shall be furnished at the lowest landing beveled to the wall.
  - E. Dust Cover:** A dust cover, fabricated from #14 gauge steel, shall be furnished at the highest landing.
  - F. Headers:** Headers of sufficient size and thickness to provide support for the frame and hangers, shall be securely fastened to the strut angles and shall include integral hanger tracks.
  - G. Struts:** Strut angles shall be of sufficient size to support the entrance and shall be securely fastened to the building structure.

- H. Hangers:** Hangers shall be of the sheave type, two sheaves per door rotating on a precision ball bearing. The roller shall be on an eccentric stud to provide adjustment. Hangers shall be integral and welded to the top of the doors.
- I. Doors:** Provide brushed stainless steel hollow metal doors of the size and type indicated, 1-1/4" thick fabricated from #16 gauge sheet material with vertical internal channel reinforcements spaced at not more than 6" on centers and welded to face sheets. Bottom of doors shall be provided with removable phenolic guides which run in the sill slots with minimum clearance.
- J. Wall and Hoistway Door Marking:** The elevator hoistway wall and/or the hoistway side of the hoistway doors shall have floor markings not less than 4" high to identify each floor landing.
- K. Sight Guards (Metal):** Sight Guards shall be furnished on the leading edge of the doors to conceal the hoistway beyond the doors. Finish to match door panels.
- L. Handicapped Jamb Marking:** Jamb marking plates, with raised floor markings to identify each landing, shall be applied to both jambs on each entrance.
- M. Labels (U/L):** Entrances shall be manufactured in accordance with the procedures established by Underwriters Laboratories and shall be so labeled.

#### 2.44 ELEVATOR ISOLATION GUIDELINES:

- A. The following isolation guidelines** are for the hydraulic elevator equipment. The project elevator consultant should review these as some of our recommendations might be superseded by the applicable elevator codes.
  1. Provide vibration isolation for the pump and motor assemblies using load bearing neoprene isolators designed to compress a minimum of 0.2 inches under load. Vibration isolators shall be equivalent to Mason Industries Model BR.
  2. Provide an in-line silencer on the hydraulic piping.
  3. Provide flexible couplings (to reduce pipe-borne noise) where the hydraulic lines attach to the pump capable of withstanding pressures specified by the elevator manufacturer. Acceptable products: Maxton (213-321-6931), Quality Elevator (800-222-3688), or United Elevator Corp (404-478-8344).
  4. Isolate hydraulic lines from the building structure at all points of attachment using Mason BR isolators between the pipe clamp and the building to prevent metal-to-metal rigid connection between the pipe and the building.
  5. Provide a neoprene pad between the plunger and elevator cab. Provide resilient roller guide tires. Provide neoprene pads, washers and bushings

between the rail brackets and the building. Acceptable product: Fabreeka (800-322-7351).

6. Provide adjustable volume controls for elevator cab arrival enunciators.
7. Provide optical cab position detectors in order to eliminate structure-borne noise associated with mechanical detectors.

### **PART 3 - EXECUTION**

3.01 **INSTALLATION:** Conform to Drawings, approved submittals, and specified Codes.

3.02 **TESTS:** As required by Codes and public agencies having jurisdiction, preformed by Contractor.

- A. Speed:** At full load and no load, operate elevator at full speed in up and down directions to demonstrate specified speed is obtained.
- B. Continuous Operation Tests:** In addition to required tests, operate elevator with 100% of rated capacity on car for 60 minutes continuously, making each stop with standing periods at stops not exceeding normal door openings and closing times of 10 seconds, whichever is the shortest period. Temperature rise in driving motor shall not exceed 50°C.
- C. Test Equipment:** Perform testing with direct reading equipment furnished by the Contractor, of sizes and designs that measurements can be witnessed by at least three people. Include electric tachometer, stop watch, recording thermometer, test loads, and other required devices.
- D. Test Records:** Maintain a written record of all testing, describing test methods and stating test results. Deliver certified copies of records to Architect.
- E. Coordination Tests:** In addition to other tests, test entire elevator system in conjunction with testing of the building electrical systems as specified under Division 26. Tests shall demonstrate power demand compatibility with building systems and each special control operation feature included in elevator system. These tests will be witnessed by the Architect and Electrical Engineer, or their representatives.

3.03 **MAINTENANCE SERVICE:** Furnish maintenance service on the entire elevator system, including systematic examination, adjustment, and lubrication of all equipment, and the repair or replacing of parts when required, using genuine standard parts of the elevator system manufacturer, as per specifications.

- A. Time of Service:** During regular working hours and days. Furnish emergency call service that is available at all times, as per specifications.

- B. Performance:** Be able to show successful experience in the complete maintenance of elevator systems, that competent mechanics are employed to perform services, that a supply of parts is maintained locally, and that qualified personnel are available to perform the service without unreasonable loss of time in reaching the site.
- C. Assignment:** Do not assign maintenance service to an agent or Subcontractor.
- D. Maintenance Period:** Perform specified maintenance for 12 months after the Date of Substantial Completion.

END OF SECTION

**SECTION 22 00 00**

**PLUMBING**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide all plumbing systems complete as indicated on the drawings.

**A. Work In This Section:** Principal items include:

1. Complete plumbing systems

**B. Related Work Not In This Section:**

1. Electrical connections.
2. Civil connections.

1.02 SUBMITTALS: Refer to Section 01 33 00 for procedures. Submit complete Shop Drawings Section 01 33 00, "Submittals".

**PART 2 - PRODUCTS**

2.01 MATERIALS: Provide materials and equipment required for completion of work as shown or required on the drawings.

2.02 ACCESSORIES: Provide all hardware, accessories, and miscellaneous items for a complete operational systems.

**PART 3 - EXECUTION**

3.01 INSTALLATION: All mechanical systems work shall be properly installed in strict compliance with drawings and all Code requirements.

END OF SECTION

**SECTION 23 00 00**

**HEATING, VENTILATING AND AIR CONDITIONING**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide all HVAC systems complete as indicated on the drawings.

**A. Work In This Section:** Principal items include:

1. HVAC systems

**B. Related Work Not In This Section:**

1. Electrical connections.  
2. Civil connections.

1.02 SUBMITTALS: Refer to Section 01 33 00 for procedures. Submit complete Shop Drawings Section 01 33 00, "Submittals".

**PART 2 - PRODUCTS**

2.01 MATERIALS: Provide materials and equipment required for completion of work as shown or required on the drawings.

2.02 ACCESSORIES: Provide all hardware, accessories, and miscellaneous items for a complete operational systems.

**PART 3 - EXECUTION**

3.01 INSTALLATION: All mechanical systems work shall be properly installed in strict compliance with drawings and all Code requirements.

END OF SECTION

**SECTION 26 00 00**

**ELECTRICAL**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide required electrical systems complete as indicated on the drawings.

**A. Work In This Section:** Principal items include:

1. Complete electrical systems.
2. Complete lighting systems.

**B. Related Work Not In This Section:**

1. Mechanical connections.

1.02 SUBMITTALS: Refer to Section 01 33 00 for procedures. Submit complete Shop Drawings Section 01 33 00, "Submittals".

**PART 2 - PRODUCTS**

2.01 MATERIALS: Provide materials and equipment required for completion of work as indicated on drawings and required by Code and approved by the Architect.

2.02 ACCESSORIES: Provide all hardware, accessories, and miscellaneous items for complete operational systems.

**PART 3 - EXECUTION**

3.01 INSTALLATION: All electrical systems work shall be properly installed in strict compliance with drawings and all Code requirements and approval by the Architect.

END OF SECTION

**SECTION 32 17 23**

**PAVEMENT MARKING, BUMPERS,  
TRUNCATED DOMES AND SIGNAGE**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide pavement marking, bumpers, truncated domes and signage as indicated, specified, and required.

A. **Work In This Section:** Principal items include:

1. Pavement markings.
2. Truncated domes.
3. Accessible signage.
4. Bumpers.

**PART 2 - PRODUCTS**

2.01 TRAFFIC PAINT: Type specially manufactured for pavement traffic line markings by Dunn Edwards, Wellborn, Sherwin-Williams, Devoe, Sinclair, Pittsburg Paint, Behr, or equal, white color unless otherwise directed.

2.02 TRUNCATED DOMES: Provide truncated domes by Hanover Architectural Products (717) 637-0500 or Disability Devices, Inc., (714) 437-9237 or equal installed where indicated on drawings. The domes are to be ADA compliant and installed in accordance with manufacturers recommendations and specifications.

2.03 PARKING BUMPERS: Standard units as detailed on drawings of minimum 3500 psi concrete and reinforced full length with not less than two No. 4 deformed reinforcing bars, lengths as indicated. Omit stake holes in adhesive secured bumpers.

**PART 3 - EXECUTION**

3.01 PAVEMENT MARKING AND STRIPING: Paint traffic and parking lines as indicated. Machine-apply paint in accordance with the directions of the paint manufacturer. Unless otherwise shown, paint lines 4" wide and as required to achieve complete opacity. Paint directional arrows, numbering, and lettering in similar fashion and with same paint. Produce completed painting and striping free of holidays and whiskers. Be responsible for paint droppings and overspray. Completely remove droppings and repair injured surfaces in a satisfactory manner. Paint disabled lines and markings a minimum of 3" wide with blue color equal to Color No. 15090 per Federal Specification 595B, disabled parking symbols, stall striping, debarkation aisles and path of travel lanes to the extent required by the Code and as enforced by the local jurisdiction where indicated. Parking spaces for the disabled shall be marked according to CBC Section 1129B.5. The tactile warning lines shall be in conformance to CBC Section 1133B.8.3 and 1133B.8.4.

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SOBOBA HORSESHOE VILLAGE – PHASE 2  
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PAVEMENT MARKING, BUMPERS,  
TRUNCATED DOMES AND SIGNAGE  
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- 3.02 ACCESSIBLE SIGNAGE: Set in accordance as detailed on drawings, provide reflectorized International Symbol of Accessibility signs and required text with porcelain enamel finish, and steel frame. Mount and finish required by Building Code. Locate signage and designed disabled stalls where indicated on site. Post mounted and wall mounted signs shall be fabricated from 16 gage enameling iron with porcelain enamel finish. Mount signs to posts with minimum two 3/16” diameter round head bolts with tamperproof nuts, galvanized. Posts are 2” diameter galvanized steel pipe weighing a minimum of 3.65 lbs per foot and conforming to ASTM A53, Schedule 40 or 2” x 2” galvanized steel tubing, weighing a minimum of 4.31 lbs per foot and conforming to ASTM A500, Grade B, 3/16” thick wall thickness.
- 3.03 BUMPER INSTALLATION: Set as detailed on drawings. Embed bumpers anchor plates fully in epoxy adhesive where installed on portland cement concrete. Refer to manufacturers recommendations for proper installation procedures.

END OF SECTION

**SECTION 32 90 00**

**LANDSCAPING**

**PART 1 - GENERAL**

1.01 DESCRIPTION: Division 1 applies to this Section. Provide all landscaping complete as indicated on drawings, specified, and required.

**A. Work In This Section:** Principal items include:

1. Complete landscaping.

**B. Related Work Not In This Section:**

1. Electrical connections
2. Mechanical connections.

1.02 SUBMITTALS: Refer to Section 01 33 00 for procedures. Submit complete Shop Drawings Section 01 33 00, "Submittals".

**PART 2 - PRODUCTS**

2.01 MATERIALS: Provide materials and equipment required for completion of work as shown or required on the drawings.

2.02 ACCESSORIES: Provide all hardware, accessories, and miscellaneous items for a complete landscaping and operational systems.

**PART 3 - EXECUTION**

3.01 INSTALLATION: All landscaping work shall be properly installed in strict compliance with drawings and all Code requirements.

END OF SECTION