MT. DIABLO UNIFIED SCHOOL DISTRICT
PURCHASING &WAREHOUSE DEPARTMENT
2326 BISSO LANE, CA 94520-4802

BID# 1959

Volume II

Project Specifications

2025 MDUSD Interior Painting Project at Northgate High School

The Project consists of interior painting of common spaces and corridors.

Mt. Diablo Unified School District

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SPECIFICATIONS – GENERAL REQUIREMENTS

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TECHNICAL SPECIFICATIONS

Division 09	Section	FINISHES
	09 29 00	Gypsum Board and Sheathing Substrates
	09 90 00	Painting and Coatings

END OF DOCUMENT

SECTION 01 10 00 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:
   1. Work covered by the Contract Documents.
   2. Type of the Contract.
   3. Work phases.
   4. Use of premises.
   5. Owner's occupancy requirements.
   6. Work restrictions.
   7. Specification formats and conventions.
   8. Deferred Approvals.
   9. Pollution Control.
   10. Storm Water Pollution Prevention Plan.
   11. Lead-Containing materials.
   12. Additional DSA requirements.

1.3 SUBMITTALS

A. Contractor shall submit written statement of responsibility per CBC 1704.1

1.4 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Identification: Northgate High School Interior Painting

B. Project Location: Northgate High School

C. Owner/ District: Mt Diablo Unified School District

D. Architect:19/six.

E. The Work consists of the following:
   1. *The Work included in this project at Northgate High School Interior Painting. The work consists of:*
      a. *General Interior Painting of Shared Spaces and Interior Corridors at Northgate High School*
      b. *Interior accent painting, murals and staining of wood handrails*

   2. The intent of these drawings and specifications is that the new construction in this contract is to be in accordance with Title 24, California Code of Regulations.

1.5 TYPE OF CONTRACT

A. Project will be constructed under a single prime contract.

1.6 WORK PHASES

A. The Work shall be conducted in one phase.

1.7 USE OF PREMISES

A. General: Contractor shall have limited use of premises for construction operations as indicated on Drawings by the Contract limits.

B. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
   1. Owner Occupancy: Allow for Owner occupancy of areas immediately adjacent to the Project site and use by the public.
   2. Driveways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
      a. Schedule deliveries to minimize use of driveways and entrances.
      b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

1.8 OWNER'S OCCUPANCY REQUIREMENTS

A. Full Owner Occupancy: Owner will occupy areas adjacent to the site and existing buildings adjacent to the project during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage.

Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits, unless otherwise indicated.

1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.
2. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.

B. Owner Occupancy of Completed Areas of Construction: Owner reserves the right to occupy and to place and install equipment in completed areas of building, before Substantial Completion, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and partial occupancy shall not constitute acceptance of the total Work.

1. Architect will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied before Owner occupancy.
2. Obtain a Certificate of Occupancy from authorities having jurisdiction before Owner occupancy.
3. Before partial Owner occupancy, mechanical and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. On occupancy, Owner will operate and maintain mechanical and electrical systems serving occupied portions of building.
4. On occupancy, Owner will assume responsibility for maintenance and custodial service for occupied portions of building.

1.9 WORK RESTRICTIONS

A. On-Site Work Hours:
1. Comply with General Conditions.

B. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
1. Notify Architect not less than two days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Architect's written permission.

1.10 SPECIFICATION FORMATS AND CONVENTIONS

A. Specification Format: The Specifications are organized into Divisions and Sections using the 49-division format and CSI's Master Format 2004 numbering system.

1. Section Identification: The Specifications use Section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete because all available Section numbers are not used. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of Sections in the Contract Documents.
2. Division 1: Sections in Division 1 govern the execution of the Work of all Sections in the Specifications.

B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

1.11 POLLUTION CONTROL

A. Provide positive methods, means and facilities required to prevent contamination of the soil, water or atmosphere by the discharge of noxious substances from the construction operations.

1.12 MISCELLANEOUS PROVISIONS

A. Noise and Dust Control: As specified in General Conditions.

1.13 LEAD-CONTAINING MATERIALS.

A. The Contractor shall assume that all ceramic tile and painted or varnished surfaces in the school district contain detectable levels of lead which trigger compliance with California Code of Regulation, Title 8, Section 1532.1. In addition, waste products from

these materials could contain lead at levels which are subject to the hazardous waste requirements in the California Code of Regulations, Title 22, Sections 666260.1 - 66263.12 and 66268.1 - 66268.124 and the health and Safety Code Section 25157.8 and 25163, subdivision (c).

B. It is the Contractor's responsibility to handle and dispose of these materials in accordance with the regulations. If failure to comply with these regulations results in a site or worker contamination, the Contractor will be held solely responsible for all costs involved in any required corrective action.

C. Lead-based paint should be removed only by professionals trained in hazardous material removal. A trained professional must follow very detailed procedures to minimize, control and contain lead dust generated by the removal process.
   1. The room should be sealed from the rest of the building. All furniture, carpets and drapes should be removed.
   2. Workers should wear respirators designed to avoid inhaling lead.
   3. No eating or drinking should be allowed in the work area. All food and eating utensils should be removed from the room. All cabinets as well as food contact surfaces should be covered and sealed.
   4. Occupants should be kept out of the room until the job is completed.
   5. Clothing worn in the room should be disposed of after working. The work clothing should not be worn in other areas of the building.
   6. Debris should be cleaned up using special vacuum cleaners with HEPA (high efficiency particle absorption) filters. A wet mop should be used after vacuuming.

1.14 ADDITIONAL DSA REQUIREMENTS

A. Comply with the following:
   1. Compliance with Title 24, for Parts 1-6 and 9.
   2. Title 24, All applicable parts referred to by the plans and specifications shall be kept on site during construction.
   3. All addenda must be signed by Architect and approved by DSA. (Section 4-338, Part 1)
   4. All substitutions affecting DSA regulated items shall be considered as a Construction Change Document or Addenda, and shall be approved by DSA prior to fabrication and installation. (IR-A6) (Section 4-338(c), Part 1)
   5. Construction Change Document (Section 4-338 (c), Part 1) must be signed by all the following:
      a. A/E of Record.
      b. Owner (change order only).
      c. SEOR (when applicable).
      d. Delegated Professional Engineer (when applicable).

e. DSA.

6. Project Inspector and testing lab must be employed by the Owner and approved by all of the following:
   a. A/E of Record.
   b. SEOR (when applicable).
   c. DSA.

B. Tests and Inspections - Chapter 17A:
   1. All tests shall be performed by a testing facility acceptable to the architect and DSA. The testing facility shall be directly employed by the school district and no other entity or individual. Section Title 24, Part 1, Section 4-335(b).
   2. Test reports shall be addressed to, and sent to, the school district by the testing facility. Copies of all test reports shall be sent to DSA, the architect, the structural engineer, and the project inspector by the testing facility. All reports shall be sent within 14 days of the date of the test. See Title 24, Part 1, Section 4-335(d).
   3. A Verified Report, sighed by the California licensed civil engineer in charge of the testing facility which conducted the tests, shall be submitted to DSA upon completion of the project. The verified report shall state that all tests and inspections were made as required by the DSA approved documents. If the tests or inspections indicate that materials or workmanship did not meet the requirements of the DSA approved documents, the Verified Report shall list all noncompliant work. A copy of all test reports involving unresolved noncompliant work shall be attached to the Verified Report. In the event that not all required tests or inspections were made by the testing facility making this verified report, those tests and inspections not made shall be listed on the Verified Report. See Title 24, Part 1, Section 4-335(e).

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 10 00

DOCUMENT 01 12 10

CONTRACT FORMS AND SUBMITTALS

1. GENERAL

1.1. RELATED DOCUMENTS AND PROVISIONS

Contractor shall review all Contract Documents for applicable provisions related to the provisions in this document, including without limitation:

1.1.1. General Conditions;

1.1.2. Special Conditions (if any);

1.1.3. Supplemental Conditions (if any);

1.1.4. Submittals; and

1.1.5. Construction Schedule.

2. REQUIREMENTS OF THE DISTRICT

2.1. Contractor shall utilize the District's forms as indicated below This requirement also applies to submittals, including the requirement that the Contractor and its Subcontractors, as indicated, utilize the software, internet and specific programs on this Project as indicated herein.

2.2. DISTRICT FORMS

All forms identified below shall utilize District forms.

2.2.1. **Request for Information.** Contractor shall comply with all applicable provisions in Contract Documents relating to Requests for Information. Contractor shall submit all of its Requests for Information using District's Form attached hereto.

2.2.2. **Construction Directive.** Contractor shall comply with all applicable provisions in Contract Documents relating to Changes in the Work. All Construction Directives shall be issued using District's Form attached hereto.

2.2.3. **Price Request.** Contractor shall comply with all applicable provisions in Contract Documents relating to Price Requests. All Price Requests shall be issued using District's Form attached hereto.

2.2.4. **Proposed Change Order.** Contractor shall comply with all applicable provisions in Contract Documents relating to Changes in the Work. Contractor shall submit all of its Proposed Change Orders using District's Form attached hereto.

2.2.5. **Change Order.** Contractor shall comply with applicable provisions in Contract Documents relating to Changes in the Work. All Change Orders shall be issued using District's Form attached hereto.

2.3. CONTRACTOR SUBMITTALS

All submittals required by the Contract Documents shall be submitted using the programs, processes and software indicated below. If no specific program or format is indicated, then Microsoft Word or Microsoft Excel is acceptable.

2.3.1. **Preliminary Construction Schedule**

2.3.1.1. Utilize Primavera P6 Project Management® software (latest version) by Oracle (PCM) (http://www.oracle.com/us/industries/engineering-and-construction/index.html) or another program if pre-approved by the District.

2.3.2. **Schedule of Values**

2.3.2.1. Utilize PCM or another program if pre-approved by the District.

2.3.3. **Contractor's Completed Subcontractor List**

2.3.4. **Contractor's Safety Plan**

2.3.5. **Schedule of Submittals**

2.3.5.1. Utilize PCM or another program if pre-approved by the District.

2.3.6. **Operations and Maintenance Manual & Instructions**

END OF DOCUMENT

DOCUMENT 01 21 00

ALLOWANCES

1. GENERAL

1.1. RELATED DOCUMENTS AND PROVISION

Contractor shall review all Contract Documents for applicable provisions related to the provisions in this document, including without limitation:

1.1.1. General Conditions including without limitation, Contract Terms and Definitions;

1.1.2. Special Conditions (if any);

1.1.3. Supplemental Conditions (if any).

1.1.4. Agreement;

1.1.5. Bid Form; and

1.2. SUMMARY

1.2.1. **THE SPECIFIC ALLOWANCES FOR THIS PROJECT ARE AS LISTED IN THE AGREEMENT.**

1.2.2. This Document includes administrative and procedural requirements governing Allowances.

1.2.3. Certain items are specified in the Contract Documents by Allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements may be issued by Change Order or similar document.

1.3. SELECTION AND PURCHASE

1.3.1. At the earliest practical date after award of the Contract, Contractor shall advise District of the date when final selection and purchase of each product or system described by an Allowance must be completed to avoid delaying the Work.

1.3.2. At District's request, obtain proposals for each Allowance for use in making final selections. Include recommendations that are relevant to performing the Work.

1.3.3. Purchase products and systems selected by District from the designated supplier.

1.4. SUBMITTALS

1.4.1. Submit proposals for purchase of products or systems included in Allowances, in the form specified for Change Orders.

1.4.2. Submit invoices or delivery slips to show actual quantities of materials delivered to the Site for use in fulfillment of each Allowance.

1.4.3. Coordinate and process submittals for Allowance items in same manner as for other portions of the Work.

1.5. COORDINATION

Coordinate Allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.6. PAYMENT FOR ALLOWANCES

1.6.1. Allowance shall include all-inclusive cost to Contractor of specific products and materials under Allowance and Contractor may bill its time, materials, and other items in the identical structure as a Change Order.

1.7. UNUSED MATERIALS

1.7.1. Return unused materials purchased under an Allowance to manufacturer or supplier for credit to District, after installation has been completed and accepted.

1.7.2. If requested, prepare and deliver unused material for storage by District when it is not economically practical (as determined by District) to return the material for credit. If directed, deliver unused material to District's storage space. Otherwise, disposal of unused material is Contractor's responsibility.

2. EXECUTION

2.1. EXAMINATION

Examine products covered by an Allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

2.2. PREPARATION

Coordinate materials and their installation for each Allowance with related materials and installations to ensure that each Allowance item is completely integrated and interfaced with related work.

END OF DOCUMENT

DOCUMENT 01 23 00

ALTERNATES AND UNIT PRICING

1. ALTERNATES AND UNIT PRICES

1.1. RELATED DOCUMENTS AND PROVISIONS

Contractor shall review all Contract Documents for applicable provisions related to the provisions in this document, including without limitation:

1.1.1. General Conditions;

1.1.2. Special Conditions (if any);

1.1.3. Supplemental Conditions (if any);

1.1.4. Bid Form and Proposal; and

1.1.5. Instruction to Bidders.

2. ALTERNATES

2.1. DESCRIPTION

An amount proposed by Contractor and stated in its Bid Form for certain work defined in the Instruction to Bidders, Bid Form or Contract Documents that may be added to or deducted from the Base Bid amount. The acceptance or rejection of any of the alternates is strictly at the option of the District and subject to District's acceptance of Contractor's stated prices contained in this Proposal.

The cost or credit for each alternate is the net addition to or deduction from the Contract Price to incorporate the alternate into the Work. No other adjustments are made to the Contract Price.

2.2. GENERAL:

2.2.1. Coordination: Contractor shall modify or adjust adjacent work as necessary to completely integrate work of the alternate into the Project.

2.2.1.1. Include as part of each alternate, miscellaneous devices, accessories and similar items incidental to or required for a complete installation whether or not indicated as part of the alternate.

2.2.1.2. Include as part of each alternate, the costs of related coordination, modification, or adjustments.

2.2.2. If District accepts an alternate, Contractor shall perform the work of the alternate under the same conditions as other Work required by Contract Documents.

2.2.3. Notification: Immediately following award of the Contract, Contractor shall notify all of its Subcontractor(s) in writing of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.

2.2.4. Schedule of Alternates: A Schedule of Alternates is included at the end of this Document. Specifications referenced in the Schedule of Alternates contain requirements for materials necessary to achieve the Work described under each alternate.

3. UNIT PRICING

3.1. DESCRIPTION

An amount proposed by Contractor and stated in its Bid Form for certain work defined in the Instruction to Bidders and Bid Form that may be priced by unit. The acceptance or rejection of any of the unit prices is strictly at the option of the District and subject to District's acceptance of Contractor's stated prices contained in the Bid Form and may be subsequently negotiated prior to incorporation on Change Order(s).

3.2. GENERAL

Contractor shall completely state all required figures based on Unit Prices required in the Bid Form. Where scope of Work is decreased, all Work pertaining to the item, whether specifically stated or not, shall be omitted and where scope of Work is increased, all work pertaining to that item required to render same ready for use on the Project in accordance with intention of Drawings and Specifications shall be included in an agreed upon price amount.

3.3. UNIT PRICES

Furnish unit prices for each of the named items on a square foot, lineal foot, or per each basis, as requested and applicable. Unit prices shall include all labor, materials, services, profit, overhead, insurance, bonds, taxes, and all other incidental costs of Contractor, subcontractors, and supplier(s).

END OF DOCUMENT

DOCUMENT 01 25 10

PRODUCT OPTIONS AND SUBSTITUTIONS

1. GENERAL

1.1. RELATED DOCUMENTS AND PROVISIONS

Contractor shall review all Contract Documents for applicable provisions related to the provisions in this document, including without limitation:

1.1.1. General Conditions;

1.1.2. Special Conditions (if any);

1.1.3. Supplemental Conditions (if any); and

1.1.4. Instructions to Bidders.

1.2. DOCUMENT INCLUDES

1.2.1. Product options.

1.2.2. Limitations on Substitutions.

1.2.3. Regulatory Requirements.

1.2.4. Substitution Representation.

1.2.5. Submittal Procedure.

1.2.6. District's Review.

1.3. DEFINITIONS

1.3.1. Requests for changes in products, materials, or equipment required by Contract Documents proposed by the Contractor prior to and after award of the Contract are considered requests for substitutions. Contractor must refer to the Instructions to Bidders, the General Conditions and the Special Conditions for limitations on when requests for substitution(s) are permitted on Project. The following are not considered substitutions:

1.3.1.1. Revisions to Contract Documents requested by the District or Architect.

1.3.1.2. Specified options of products, materials, and equipment included in Contract Documents.

1.3.2. Whenever in the Specifications any material, product, thing, or service is indicated or specified by grade, patent, or proprietary name, or by name of manufacturer, that Specification shall be deemed to be used for the purpose of facilitating the description

of the material, product, thing, or service, and shall be deemed to be followed by the words "or equal," except:

1.3.2.1. When designated to match other material, product, thing, or service in use on a particular public improvement either completed or in the course of completion; or

1.3.2.2. When designated as a field test or experiment.

1.4. PRODUCT OPTIONS

1.4.1. **Products Specified by Reference Standards or by Description Only**: Any Product meeting those standards or description.

1.4.2. **Products Specified by Naming One or More Manufacturers with or without Provision for Substitution**: Products of manufacturers named and meeting specifications with substitution of Products or manufacturer only when submitted under provisions of this section.

1.5. LIMITATIONS ON SUBSTITUTIONS

1.5.1. **Requests for substitution prior to bid or after bid, shall only be permitted as indicated in and in accordance with requirements specified in the Instructions to Bidders and the Special Conditions.**

1.5.2. The Bid shall be based upon the standards of quality established by those items of equipment and/or materials which are specifically identified in the Contract Documents.

1.5.3. Burden of proof of merit of requested substitution is the responsibility of the Contractor.

1.5.4. It is the sole responsibility of Contractor to submit the proper content of any requests for substitutions. Incomplete submittals will be rejected.

1.6. REGULATORY REQUIREMENTS

1.6.1. It shall be the responsibility of Contractor to obtain all regulatory approvals required for proposed substitutions.

1.6.2. All regulatory approvals shall be obtained for proposed substitutions prior to submittal of substitution request to Architect.

1.6.3. All costs incurred by the District in obtaining regulatory approvals for proposed substitutions to include the costs of the Architect and any authority having jurisdiction over the Project shall be reimbursed to the District. Costs of these services shall be reimbursed regardless of final acceptance or rejection of substitution.

F

1.7. SUBSTITUTION REPRESENTATION

1.7.1. In submitting a request for substitution, Contractor makes the representation that:

1.7.2. Contractor has investigated the proposed substitution and determined that it meets or exceeds the quality level of the specified product;

1.7.3. Contractor has determined that all components of the proposed substitution are identical and fully interchangeable with the product name and number specified;

1.7.4. Contractor will provide the same warranty or guarantee for the substitution as for the specified product;

1.7.5. Contractor will coordinate installation and make changes to other work which may be required for the work to be completed with no additional cost to the District;

1.7.6. Contractor waives claims for additional cost or time extension which may subsequently become apparent; and

1.7.7. Contractor will reimburse District for the cost of District's and Architect's review or redesign services associated with substitution request.

1.8. SUBMITTAL PROCEDURE

1.8.1. Submit six (6) copies of each request.

1.8.2. Submit request using District's Substitution Request Form as indicated in Contract Forms and Submittals. Substitution requests that are not on District's required form shall be returned without review.

1.8.3. Limit each request to one proposed substitution.

1.8.4. Request to include sufficient data so that direct comparison of proposed substitution can be made.

1.8.5. Provide complete documentation for each request. Documentation shall include the following information, as appropriate, as a minimum:

1.8.5.1. Statement of cause for substitution request.

1.8.5.2. Identify product by specification section and article number.

1.8.5.3. Provide manufacturer's name, address, and phone number. List fabricators, suppliers, and installers as appropriate.

1.8.5.4. List similar projects where proposed substitution has been used, dates of installation and names of Architect and District.

1.8.5.5. List availability of maintenance services and replacement materials.

1.8.5.6. Documented or confirmation of regulatory approval.

1.8.5.7. Product data, including drawings and descriptions of products.

1.8.5.8. Fabrication and installation procedures.

1.8.5.9. Samples of proposed substitutions.

1.8.5.10. Itemized comparison of significant qualities of the proposed substitution with those of the product specified. Significant qualities may include size, weight, durability, performance requirements and visual effects.

1.8.5.11. Coordination information, including a list of changes or modifications needed to other items of work that will become necessary to accommodate proposed substitution.

1.8.5.12. Statement on the substitutions effect on the Construction Schedule.

1.8.5.13. Cost information including a proposal of the net reduction in cost to the Contract Price if the proposed substitution is accepted.

1.8.5.14. Certification that the substitution is equal to or better in every respect to that required by the Contract Documents and that substitution will perform adequately in the application intended.

1.8.5.15. Waiver of right to additional payment or time that may subsequently become necessary because of failure of substitution to perform adequately.

1.8.6. Inadequate warranty, vagueness of submittal, failure to meet specified requirements, or submittal of insufficient data will be cause for rejection of substitution request.

1.9. DISTRICT'S REVIEW

1.9.1. The District will accept or reject proposed substitution within a reasonable amount of time.

1.9.2. If a request is made prior to bid opening and the District has not completed its review, Contractor shall base its bid on the product specified only.

1.9.3. There shall be no claim for additional time for review of proposed substitutions.

1.9.4. Final acceptance of a substitution submitted prior to the date established for the receipt of bids will be in the form of an addendum.

END OF DOCUMENT

DOCUMENT 01 26 00

CONTRACT MODIFICATION PROCEDURES

1. GENERAL

1.1. RELATED DOCUMENTS AND PROVISIONS

Contractor shall review all Contract Documents for applicable provisions related to the provisions in this document, including without limitation:

1.1.1. General Conditions;

1.1.2. Special Conditions (if any);

1.1.3. Supplemental Conditions (if any);

1.1.4. Allowances;

1.1.5. Product Options and Substitutions; and

1.1.6. Project Coordination.

1.2. DESCRIPTION

1.2.1. This Document contains procedures to be followed by the Contractor to request changes in the Contract Time of the Contract Price.

1.2.2. **IF THERE IS ANY INCONSISTENCY IN THIS DOCUMENT WITH THE PROVISIONS IN THE GENERAL CONDITIONS AND THE SPECIAL CONDITIONS THAT THE CONTRACTOR SHALL COMPLY WITH RELATED TO CHANGES AND/OR REQUESTS FOR CHANGES (e.g., "Change in the Work"), THOSE PROVISIONS IN THE GENERAL CONDITIONS AND THE SPECIAL CONDITIONS SHALL TAKE PRECEDENCE.**

1.3. SUMMARY

This Document specifies administrative and procedural requirements for handling and processing Contract modifications.

1.4. Minor Changes in the Work

Owner may issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract sum or the Contract Time, or Changes not affecting the Structural Safety, Access Compliance or Fire & Life Safety portions of the work.

1.5. PRICE REQUESTS

1.5.1. Do not consider Price Requests to be instructions either to stop work in progress or to execute the proposed change.

1.5.2. Within time specified in Price Request after receipt of Price Request, submit a quotation estimating cost adjustments to the Contract Price and the Contract Time necessary to execute the change.

1.5.2.1. 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.

1.5.2.2. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

1.5.2.3. Include costs of labor directly attributable to the change.

1.5.2.4. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

1.6. PROPOSED CHANGE ORDERS

Contractor may propose changes by submitting a request for a change on District's Proposed Change Order form (PCO) to District.

1.6.1. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

1.6.2. Comply with Contract Document requirements if the proposed change requires substitution of one product or system for product or system specified.

END OF DOCUMENT

DOCUMENT 01 26 10

REQUESTS FOR INFORMATION

1. GENERAL

1.1. RELATED DOCUMENTS AND PROVISIONS

Contractor shall review all Contract Documents for applicable provisions related to the provisions in this document, including without limitation:

1.1.1. General Conditions;

1.1.2. Special Conditions (if any);

1.1.3. Supplemental Conditions (if any);

1.1.4. Documentation Requirements;

1.1.5. Electronic Data Transfer;

1.1.6. Submittals;

1.1.7. Contract Closeout and Final Cleaning;

1.1.8. Operation and Maintenance Data;

1.1.9. Warranties; and

1.1.10. Record Documents;

1.2. DESCRIPTION

This Document contains procedures to be followed by the Contractor to request Architect provide additional information necessary to clarify or amplify an item in the Contract Documents that Contractor thinks is not clearly shown or called for in the Drawings or Specifications or other portions of the Contract Documents, or to address issues that have arisen under field conditions.

1.3. PROCEDURES

1.3.1. Notification by Contractor:

1.3.1.1. Submit all requirements for clarification or additional information, whether originated by the Contractor, a Subcontractor, or supplier at any tier, in writing to District as required by the Contract Documents.

1.3.1.2. Number RFIs sequentially. Follow RFI number with sequential alphabetical suffix as necessary for each resubmission. For example, the first RFI would be "001." The second RFI would be "002."

1.3.1.3. All RFIs shall reference all applicable Contract Document(s), including Specification section(s), detail(s), page number(s), drawing number(s), and sheet number(s), etc. Contractor shall make suggestions and interpretations of

the issue raised by each RFI. An RFI cannot modify the Contract Price, Contract Time, or the Contract Documents.

1.3.1.4. Limit each RFI to one subject.

1.3.1.5. Submit a RFI if one of the following conditions occurs:

1.3.1.5.1. Contractor discovers an unforeseen condition or circumstance that is not described in the Contract Documents.

1.3.1.5.2. Contractor discovers an apparent conflict or discrepancy between portions of the Contract Documents that appears to be inconsistent or is not reasonably inferred from the intent of the Contract Documents.

1.3.2. Contractor shall not:

1.3.2.1. Submit an RFI as a request for substitution.

1.3.2.2. Submit an RFI as a submittal.

1.3.2.3. Submit an RFI without first having thoroughly reviewed the Contract Documents.

1.3.2.4. Submit an RFI in a manner that suggests that specific portions of the Contract Documents are assumed to be excluded or by taking an isolated portion of the Contract Documents in part rather than whole.

1.3.2.5. Submit an RFI in an untimely manner without proper coordination and scheduling of Work related trades.

1.3.2.6. If Contractor submits an RFI contrary to the above, Contractor shall pay the cost of any review, which cost shall be deducted from the Contract Price.

1.3.3. Contractor shall be liable to the District for all costs incurred by the District associated with the processing, reviewing, evaluating and responding to any RFI, including without limitation, fees of the Architect and any other design consultant to the Architect or the District, that District reasonably determines:

1.3.3.1. Does not reflect adequate or competent supervision or coordination by the Contractor or any Subcontractor; or

1.3.3.2. Does not reflect the Contractor's adequate or competent knowledge of the requirements of the Work or the Contract Documents;

1.3.3.3. Requests an interpretation or decision of a matter where the information sought is equally available to the Contractor; or

1.3.3.4. Is not justified for any other reason.

1.4. RESPONSE TIME

1.4.1. Architect shall review RFIs and issue a response and instructions to Contractor within a reasonable time frame from the date the RFI is received and dated by the District.

1.4.2. Responses from the District will not change any requirement of the Contract unless so noted by the District in the response to the RFI. Should the Contractor contend that a response to an RFI causes a change to the Contract that requires a Change Order, the Contractor shall, before proceeding, give written notice to the District, indicating that the Contractor considers the District's response to the RFI to be a Change Order, as required by the Contract Documents.

1.4.3. Should Contractor direct its Subcontractors to proceed with the Work affected before receipt of a response from Architect, any portion of the Work which is not done in accordance with the Architect's ultimate interpretations, clarifications, instructions, or decisions is subject to removal or replacement at Contractor's sole expense and responsibility.

END OF DOCUMENT

DOCUMENT 01 29 00

PAYMENT PROCEDURES

1. GENERAL

1.1. RELATED DOCUMENTS AND PROVISIONS

Contractor shall review all Contract Documents for applicable provisions related to the provisions in this document, including without limitation:

1.1.1. General Conditions;

1.1.2. Special Conditions (if any);

1.1.3. Supplemental Conditions (if any).

1.2. DESCRIPTION

1.2.1. This Document contains procedures to be followed by the Contractor to request payment.

1.2.2. **IF THERE IS ANY INCONSISTENCY IN THIS DOCUMENT WITH THE PROVISIONS IN THE GENERAL CONDITIONS AND THE SPECIAL CONDITIONS THAT THE CONTRACTOR SHALL COMPLY WITH RELATED TO CHANGES AND/OR REQUESTS FOR CHANGES (e.g., "PAYMENTS," "SCHEDULE OF VALUES"), THOSE PROVISIONS IN THE GENERAL CONDITIONS AND THE SPECIAL CONDITIONS SHALL TAKE PRECEDENCE.**

1.3. SECTION INCLUDES

1.3.1. Schedule of Values.

1.3.2. Application for Payment.

1.4. SCHEDULE OF VALUES

1.4.1. Provide a breakdown of the Contract Price with enough detail to facilitate continued evaluation of Applications for Payment and Progress Reports utilizing or another program if pre-approved by the District..

1.4.2. Contractor must update and resubmit the Schedule of Values before the next Invoice or Application for Payment when Change Orders or Construction Change Directives result in a change in the Contract Price.

1.4.3. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule. Comply with the provisions in the General Conditions regarding the Schedule of Values.

1.4.3.1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:

1.4.3.1.1. Application for Payment forms.

1.4.3.1.2. Submittal Schedule.

1.4.3.1.3. Contractor's Construction Schedule.

1.4.3.2. Submit the Schedule of Values to District as indicated in the Contract Documents and, if an updated Schedule of Values is needed, then no later than ten (10) days before the date scheduled for submittal of the next Application(s) for Payment.

1.4.3.3. Subschedules: Where the Work is separated into phases requiring separately phased payments, provide subschedules showing values correlated with each phase of payment.

1.4.4. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.

1.4.4.1. Identification: Include the following Project identification on the Schedule of Values:

1.4.4.1.1. Project name and location.

1.4.4.1.2. Name of District's Representative.

1.4.4.1.3. District's contract number (_____).

1.4.4.1.4. District's name and address.

1.4.4.1.5. Date of submittal.

1.4.4.2. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:

1.4.4.2.1. Related Specification document, section or division.

1.4.4.2.2. Description of the Work.

1.4.4.2.3. Name of subcontractor.

1.4.4.2.4. Name of manufacturer or fabricator.

1.4.4.2.5. Name of supplier.

1.4.4.2.6. Change Orders (numbers) that affect value.

1.4.4.2.7. Dollar value.

1.4.4.2.7.1. Percentage of the Contract Price to nearest one-hundredth percent, adjusted to total 100 percent.

1.4.4.3. Provide a breakdown of the Contract Price in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide several line items for principal subcontract amounts, where appropriate. Include separate line items under required principal subcontracts for operation and maintenance manuals, punch list activities, Project Record Documents, and demonstration and training.

1.4.4.4. Round amounts to nearest whole dollar; total shall equal the Contract Price.

1.4.4.5. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.

1.4.4.6. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.

1.4.4.7. Allowances (if any): Provide a separate line item in the Schedule of Values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.

1.4.4.8. Each item in the Schedule of Values and Applications for Payments shall be complete. Include total cost and proportionate share of general overhead and profit for each item.

1.4.5. Schedule Updating: Update and resubmit the Schedule of Values before the next Application for Payment if there is a change in the Contract Price.

1.5. APPLICATIONS FOR PAYMENT

1.5.1. **Form:** Contractor shall utilize AIA Form G702 - Application and Certificate for Payment and AIA Form G703 - Continuation Sheet, or District-approved form with the same information as these AIA forms.

1.5.2. **Content and Format**: District shall use Schedule of Values for listing items in its Application for Payment.

1.5.3. Each Application for Payment shall be consistent with previous applications and payments as certified and paid for by District.

END OF DOCUMENT

DOCUMENT 01 31 00

Project Management and Coordination

1. GENERAL

1.1. RELATED DOCUMENTS AND PROVISIONS:

Contractor shall review all Contract Documents for applicable provisions related to the provisions in this document, including without limitation:

1.1.1. General Conditions;

1.1.2. Special Conditions (if any);

1.1.3. Supplemental Conditions (if any); and

1.1.4. Technical Specifications.

1.2. SECTION INCLUDES

1.2.1. Coordination Responsibilities of the Contractor.

1.2.2. Field Engineering Responsibilities of the Contractor.

1.2.3. Preconstruction Conference.

1.2.4. Progress Meetings.

1.2.5. Pre-Installation Conferences.

1.2.6. Post Construction Dedication.

1.3. COORDINATION RESPONSIBILITIES OF THE CONTRACTOR

1.3.1. Coordinate scheduling, submittals, and Work of the Specifications to assure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.

1.3.2. Prior to commencement of a particular type or kind of Work examine relevant information, contract documents, and subsequent data issued to the Project.

1.3.3. Verify that utility requirement characteristics of operating equipment are compatible with building utilities. Coordinate Work of various sections having interdependent responsibilities for installing, connecting to, and placing in service such equipment.

1.3.4. Closing up of holes, backfilling, and other covering up operations shall not proceed until all enclosed or covered Work and inspections have been completed. Verify before proceeding.

1.3.5. Coordinate space requirements and installation of mechanical and electrical Work which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit as closely as practicable; place runs parallel with line of building. Utilize spaces

efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

1.3.6. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.

1.3.7. In locations where several elements of mechanical and electrical Work must be sequenced and positioned with precision in order to fit into available space, prepare coordination drawings showing the actual conditions required for the installation. Prepare coordination drawings prior to purchasing, fabricating, or installing any of the elements required to be coordinated.

1.3.8. Closing up of walls, partitions or furred spaces, backfilling, and other covering up operations shall not proceed until all enclosed or covered Work and inspections have been completed. Verify before proceeding.

1.3.9. Coordinate completion and cleanup of Work of separate sections in preparation for completion and for portions of Work designated for District's occupancy.

1.3.10. After District occupancy of Project, coordinate access to Site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of District's activities.

1.3.11. Coordinate all utility company Work in accordance with the Contract Documents.

1.3.12. Key Personnel Names: Within fifteen (10) days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

1.4. FIELD ENGINEERING RESPONSIBILITIES OF THE CONTRACTOR

1.4.1. Contractor shall employ a Land Surveyor registered in the State of California and acceptable to the Architect.

1.4.2. Control datum for survey is that established by District provided survey. Contractor to locate and protect survey control and reference points.

1.4.3. Replace dislocated survey control points based on original survey control.

1.4.4. Provide field engineering services. Establish elevations, lines, and levels utilizing recognized engineering survey practices.

1.4.5. Upon completion of Work, submit certificate signed by the Land Surveyor that elevations and locations of Work are in conformance with Contract Documents. Record deviations on Record Drawings.

1.5. PRECONSTRUCTION CONFERENCE

1.5.1. Construction Manager or Project Engineer will schedule a conference immediately after, and in no case more than fifteen (15) days after, receipt of fully executed Contract Documents prior to Project mobilization.

1.5.2. Mandatory Attendance: Construction Manager, Project Engineer, Project Inspector, Architect of Record, Contractor, Contractor's Project Manager, and Contractor's Job/Project Superintendent.

1.5.3. Optional Attendance: Architect's consultants, and utility company representatives.

1.5.4. Construction Manager shall preside at conference and the Project Architect shall prepare and record minutes and distribute copies.

1.5.5. Agenda:

1.5.5.1. Execution of Owner-Contractor Agreement.

1.5.5.2. Issue Notice to Proceed.

1.5.5.3. Submission of executed bonds and insurance certificates.

1.5.5.4. Distribution of Contract Documents.

1.5.5.5. Submission of list of Subcontractors, list of Products, Schedule of Values, and Progress Schedule.

1.5.5.6. Designation of responsible personnel representing the parties.

1.5.5.7. Procedures for processing Change Orders.

1.5.5.8. Procedures for Request for Information.

1.5.5.9. Procedures for testing and inspecting.

1.5.5.10. Procedures for processing applications for payment.

1.5.5.11. Procedures for Project closeout.

1.5.5.12. Use of Premises.

1.5.5.13. Work restrictions.

1.5.5.14. District’s occupancy requirements or options.

1.5.5.15. Responsibility for temporary facilities and controls.

1.5.5.16. Construction waste management and recycling.

1.5.5.17. Parking availability.

1.5.5.18. Office, work and storage areas.

1.5.5.19. Equipment deliveries and priority.

1.5.5.20. Security.

1.5.5.21. Progress cleaning.

1.5.5.22. Review required submittals and (if applicable) LEED Certification requirements.

1.6. PROGRESS MEETINGS

1.6.1. Construction Manager shall schedule and administer meetings throughout progress of the Work at a minimum of every week.

1.6.2. Construction Manager or Project Engineer will make arrangements for meetings, prepare agenda, and preside at meetings. Project Architect shall record minutes (Field Reports), and distribute copies.

1.6.3. Attendance Required: Job Superintendent, Construction Manager, Project Engineer, Project Inspector, Architect of Record, Subcontractors, and suppliers as appropriate to agenda topics for each meeting.

1.6.4. Agenda:

1.6.4.1. Review minutes of previous meetings (Field Reports).

1.6.4.2. Review of Work progress.

1.6.4.3. Field observations, problems, and decisions.

1.6.4.4. Identification of problems which impede planned progress.

1.6.4.5. Review of submittals schedule and status of submittals.

1.6.4.6. Review of off-site fabrication and delivery schedules.

1.6.4.7. Maintenance of construction schedule.

1.6.4.8. Corrective measures to regain projected schedules.

1.6.4.9. Planned progress during succeeding work period.

1.6.4.10. Coordination of projected progress.

1.6.4.11. Maintenance of quality and work standards.

1.6.4.12. Effect of proposed changes on progress schedule and coordination.

1.6.4.13. Other business relating to Work.

1.6.5. District has authority to schedule mandatory meetings other than those listed, as necessary.

1.7. PRE-INSTALLATION CONFERENCES

1.7.1. When required in individual specification section, Contractor shall convene a pre-installation conference prior to commencing Work of the section. Refer to individual specification section for timing requirements of conference.

1.7.2. Contractor shall require its Subcontractors and suppliers directly affecting, or affected by, Work of the specific section to attend.

1.7.3. Notify the Construction Manager, Project Engineer, Project Inspector, and Architect of Record four (4) days in advance of meeting date.

1.7.4. A pre-installation conference may coincide with a regularly scheduled progress meeting.

1.7.5. Contractor shall prepare agenda, preside at conference, record minutes, and distribute copies within two (2) days after conference to participants.

1.7.6. The purpose of the meeting will be to review Contract Documents, conditions of installation, preparation and installation procedures, and coordination with related Work and manufacturer's recommendations.

1.7.7. Pre-installation Schedule: As a minimum, Work being installed under the Contract Documents technical sections will require pre-installation conferences. Contractor shall review the technical specifications and add all additional requirements for pre-installation meetings contained in those sections.

1.8. POST CONSTRUCTION DEDICATION

1.8.1. Attendance Required: Project Superintendent, Contractor, Project Manager, major Subcontractors, Construction Manager, Project Engineer, Project Inspector, and Architect of Record.

1.8.2. Preparation prior to Dedication: Contractor and appropriate Subcontractors and suppliers shall:

1.8.3. Assist District in operation of mechanical devices and systems.

1.8.3.1. Verify operation and adjust controls for communication systems.

1.8.3.2. Assist District in operation of lighting systems.

END OF DOCUMENT

SECTION 01 31 20

CLOUD-BASED PROJECT MANAGEMENT SOFTWARE

1 GENERAL

1.1 GENERAL PROJECT MANAGEMENT OBJECTIVES:

1.1.1 Contractor to provide and utilize a cloud-based project management software to manage project documentation.

1.1.2 Use of this project management software will not replace or change any contractual responsibilities of the construction team members.

1.1.3 Each Project team member of the Contractor: Superintendent, Project Engineer, Scheduler, and Project Manager, et al., shall have access to the Internet and an Internet e-mail address in order to communicate with various project team members. The Contractor shall provide immediately upon receipt of the Notice to Proceed confirmation of these conditions and the names, positions, and e-mail addresses to the Owner.

1.2 SOFTWARE AND HARDWARE REQUIREMENTS:

1.2.1 The Contractor is required to provide at both the field office and home office location from where this project is managed computer hardware and software that meet the requirements of Procore® Project Management software. The Contractor is required to purchase Procore® software, hardware and software required to access this system via the Internet. In addition, Contractor shall provide and pay for access for up to eight (8) Procore® users for Owner use including Architect, Construction Manager, and Owner. Owner users shall have full access to all information related to the project.

1.2.2 The Contractor shall provide the Owner with Procore® training. The anticipated training will take place within fifteen (15) days of Notice to Proceed and will be held either remotely or at the District Office in Concord, California, whichever is preferred by the Owner.

1.2.3 The Contractor shall provide an adequate number of users to properly manage the Project in accordance with the Project schedule. The Contractor shall have Internet access through an Internet service provider of its choice at its cost.

1.3 SYSTEM MANAGEMENT AND USE:

1.3.1 The Contractor will administer the Procore® application in accordance with the following.

1.3.1.1 There shall be a digital record of all additions, deletions or changes to information included in the Procore® application

1.3.1.2 Contractor shall provide a back-up of all information included in the Procore® system on a quarterly basis. Backup information shall be in a logical organized system that that is acceptable to the Owner and that allows for expeditious retrieval of all project documentation.

1.3.1.3 Contractor shall maintain the Procore® application and Owner access to the Procore® system through end of the project Warranty.

1.3.1.4 Contractor will provide an electronic copy of all documentation included in the Procore system in a logical organized manner that allows for expeditious retrieval of all project documentation at Final Completion and at end of project Warranty.

1.3.1 All costs associated with the Contractor's use of the Procore® system, including computer hardware and internet service are the responsibility of the Contractor.

1.4 USE BY SUBCONTRACTORS:

1.4.1 The Owner encourages the Contractor to utilize the Procore® project management application for communicating with its Subcontractors. The Contractor shall inform all Subcontractors of the purpose of the project management system and how it can assist them in obtaining information for the project.

1.5 COMMUNICATION PROCESS:

1.5.1 The Owner's will outline and detail communication, correspondence and coordination procedures for the Project.

1.5.2 Most Project communication will take place in the Procore® project management system by creating and distributing documents directly within the system, or by entering manually in the system dates and descriptions of items to track over time. All documents requiring formal signatures will be printed, and their hard copies signed and distributed.

1.5.3 The official submittal log will be maintained within Procore®. The Contractor will use the Procore® to submit and distribute prints, documents, reports, samples, etc. Physical samples will be transmitted in Procore® but delivered in the traditional manner. The Procore® project management system will be used to track and expedite processing of these items.

1.5.4 Contractor will be required to maintain all current drawings within Procore®. The Contractor will be able to control administration of the drawings which includes but is not limited to: the ability to create a custom folder structure; folder-level permissions; auto-notifications for certain events (e.g., delete, check out) using Procore's® messaging system and the user's email address; auto-detection and uploading of a drawing's reference files; detailed history for a document, including revisions and access logs.

1.5.5 Contractor will be required to utilize modules including but not limited to: daily reports; meeting minutes; punch lists; requests for information (RFI); change items; cost events; and owner change order within the Procore® project management system. The Contractor can enter an RFI and the Architect/Engineer respond to the RFI completely within the Procore® project management system without creating a hard copy. Support documentation in hard copy format for any document in Procore® may be scanned into an electronic file and attached in Procore® to documents.

1.5.6 Contractor is required to use a digital camera in order to photo-document job progress and upload the associated images taken on a regular basis to Procore®. Each daily report is to be accompanied by daily progress photos.

1.6 ARCHIVING:

1.6.1 Contractor, at its cost and expense, will provide the Owner backups (on digital media) as specified herein of documents in Procore®. In the event of any dispute as to what items are the true and correct project records, information contained the backups will control unless data has been digitally altered after distribution within the Procore® system.

ARTICLE 2 - PRODUCTS

2.1 Cloud Based Project Management Software shall be the following or equal:

Procore® Project Management: www.procore.com

ARTICLE 3 - EXECUTION

3.1 Project Management Software is an Internet-Accessed Centralized Database of project information and consists of several separate modules or master file divisions for ease of organization. Available file divisions include but are not limited to: Correspondence, Daily Reports, RFI's, Transmittals, Submittals, Meetings, Documents, Drawings, Specifications, Punch Lists, Reports, Project Photos, Project Team, Schedule of Values, change items, cost events, owner change orders, owner request for proposals, etc.

3.2 The Contractor shall provide the Owner with the number of user licenses for Procore® as described in paragraph 1.2.1 above. Each major team member for the Contractor (i.e. project manager, superintendent, etc.) must have a separate user license. The Contractor shall ensure that all major team members on this project have Internet access available during the duration of this Project.

3.3 Major Subcontractors are encouraged to utilize Procore® for the duration of their scope of work from commencement to completion of their scope of work. Major Subcontractors as a minimum shall be defined as mechanical, electrical, plumbing, structural steel, masonry, security, drywall, roofing, and others deemed beneficial by the Contractor.

END OF SECTION

SECTION 01 32 00 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
   1. Contractor's Construction Schedule.
   2. Submittals Schedule.
   3. Three Week Look-Ahead Schedule.
   4. Daily construction reports.

B. Related Sections include the following:
   1. Division 1 Section "Payment Procedures" for submitting the Schedule of Values.
   2. Division 1 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes.
   3. Division 1 Section "Submittal Procedures" for submitting schedules and reports.
   4. Division 1 Section "Quality Requirements" for submitting a schedule of tests and inspections.

1.3 SUBMITTALS

A. Submittals Schedule: Submit three copies of schedule. Arrange the following information in a tabular format:
   1. Scheduled date for first submittal.
   2. Specification Section number and title.
   3. Submittal category (action or informational).
   4. Name of subcontractor.
   5. Description of the Work covered.
   6. Scheduled date for Architect's final release or review.

B. Contractor's Construction Schedule: Submit three opaque copies of schedule, large enough (minimum 11 x 17) to show entire schedule for entire construction period.

C. Daily Construction Reports: Submit two copies at weekly intervals.

1.4 COORDINATION

A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.

B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.
   1. Secure time commitments for performing critical elements of the Work from parties involved.
   2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 SUBMITTALS SCHEDULE

A. Concurrent with the development of the Contractor's construction schedule, prepare a complete schedule of submittals. Submit the submittal schedule with the Contractor's construction schedule described above.
   1. Coordinate submittal schedule with the list of subcontracts, schedule of values and the list of products as well as the Contractor's construction schedule.
   2. The Architect will review the schedule and indicate which submittals may be deleted from the submission requirement. The deletion of the submittal requirement for an item does not release the Contractor from any requirements of the Construction Contract, General Conditions or Plans and Specifications.

B. Prepare the schedule in chronological order; include submittals required during the first 90 days of construction. Provide the following information:
   1. Scheduled date for the first submittal.
   2. Related Section number.
   3. Submittal category.
   4. Name of subcontractor.
   5. Description of the part of the Work covered.
   6. Scheduled date for resubmittal.
   7. Scheduled date the Architect's final release or review.

C. Distribution: Following response to initial submittal, print and distribute copies to the Architect, Owner, subcontractors, and other parties required to comply with submittal dates indicated. Post copies in the project meeting room and field office.
   1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.

D. Schedule Updating: Revise the schedule after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule concurrently with report of each meeting.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Bar-Chart Schedule: Prepare a fully developed, horizontal bar-chart type Contractor's construction schedule. Submit within 15 days of the date established for "Commencement of the Work". The Construction Schedule must be submitted and accepted prior to approval of first pay application.
   1. Provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week. Use the same breakdown of units of the Work as identified in the "Schedule of Values".
   2. Within each time bar indicate estimated completion percentage in 10 percent increments. As work progresses, place a contrasting mark in each bar to indicate Actual Completion.
   3. Prepare the schedule on a sheet, or series of sheets, of stable reproducible media, of sufficient width to show data for the entire construction period.
   4. Secure time commitments for performing critical elements of the Work from parties involved. Coordinate each element on the schedule with other construction activities; include minor elements involved in the sequence of the Work. Show each activity in proper sequence. Indicate graphically sequences necessary for completion of related portions of the Work.
   5. Coordinate the Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests and other schedules.
   6. Indicate completion in advance of the date established for Substantial Completion. Indicate Substantial Completion on the schedule to allow time for the Architect's procedures necessary for certification of Substantial Completion.

B. Phasing: Provide notations on the schedule to show how the sequence of the Work is affected by requirements for phased completion to permit work by separate Contractors and partial occupancy by the Owner prior to Substantial Completion.

C. Work Stages: Indicate important stages of construction for each major portion of the Work, including testing and installation.

D. Area Separations: Provide a separate time bar to identify each major construction area for each major portion of the Work. Indicate where each element in an area must be sequenced or integrated with other activities.

E. Cost Correlation: At the head of the schedule, provide a two item cost correlation line, indicating "pre-calculated" and "actual" costs. On the line show dollar-volume of work performed as of the dates used for preparation of payment requests.
   1. Refer to Section "Payment Procedures" for cost reporting and payment procedures.

2.3 THREE WEEK LOOK-AHEAD SCHEDULE

A. Prepare weekly (or as determined by scheduled meeting times), prior to Project meetings, a computer-generated 3-week look-ahead schedule (bar chart) which is consistent with the Contractors schedule and depicts daily labor activities. The schedule will consist of the prior week, current week and the following 3 weeks.

2.4 REPORTS

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
   1. List of subcontractors at Project site.
   2. List of separate contractors at Project site.
   3. Approximate count of personnel at Project site.
   4. Equipment at Project site.
   5. Material deliveries.
   6. High and low temperatures and general weather conditions.
   7. Accidents.
   8. Meetings and significant decisions.
   9. Unusual events (refer to special reports).
   10. Stoppages, delays, shortages, and losses.
   11. Meter readings and similar recordings.
   12. Emergency procedures.
   13. Orders and requests of authorities having jurisdiction.
   14. Change Orders received and implemented.
   15. Construction Change Directives received and implemented.
   16. Services connected and disconnected.
   17. Equipment or system tests and startups.
   18. Partial Completions and occupancies.
   19. Substantial Completions authorized.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
   1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
   2. Include a report with updated schedule that indicates changes, including, but not limited to, changes in durations, actual starts and finishes, and activity durations.

3. As the Work progresses, indicate Actual Completion percentage for each activity.

B. Distribution: Distribute copies of reviewed schedule to Architect Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
   1. Post copies in Project meeting rooms and temporary field offices.
   2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

3.2 FORMS

A. Electronic versions of attached forms will be provided upon request.
   1. Submittals Schedule Form.

END OF SECTION 01 32 00

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DOCUMENT 01 32 16

CONSTRUCTION SCHEDULE – NETWORK ANALYSIS

1. GENERAL

1.1. RELATED DOCUMENTS AND PROVISION

Contractor shall review all Contract Documents for applicable provisions related to the provisions in this document, including without limitation:

1.1.1. General Conditions;

1.1.2. Special Conditions (if any);

1.1.3. Supplemental Conditions (if any);

1.1.4. Coordination and Meetings; and

1.1.5. Submittals.

1.2. REFERENCES

1.2.1. Construction Planning and Scheduling Manual - A Manual for General Contractors and the Construction Industry, The Associated General Contractors of America (AGC).

1.2.2. CSI - Construction Specifications Institute MP-2-1 Master Format.

1.2.3. U.S. National Weather Service - Local Climatological Data.

1.3. PERFORMANCE REQUIREMENTS

1.3.1. Ensure adequate scheduling during construction activities so Work may be prosecuted in an orderly and expeditious manner within stipulated Contract Time.

1.3.2. Ensure coordination of Contractor and Subcontractors at all levels.

1.3.3. Ensure coordination of submittals, fabrication, delivery, erection, installation, and testing of products, materials and equipment.

1.3.4. Ensure on-time delivery of District furnished products, materials and equipment.

1.3.5. Ensure coordination of jurisdictional reviews.

1.3.6. Prepare applications for payment.

1.3.7. Monitor progress of Work.

1.3.8. Prepare proper requests for changes to Contract Time.

1.3.9. Prepare proper requests for changes to Construction Schedule.

1.3.10. Assist in detection of schedule delays and identification of corrective actions.

1.4. QUALITY ASSURANCE

1.4.1. Perform scheduling work in accordance with Construction Planning and Scheduling Manual published by the AGC.

1.4.2. Maintain one copy of Construction Planning and Scheduling Manual on Site.

1.4.3. In the event of discrepancy between the AGC publication and the Contract Documents, provisions of the Contract Documents shall govern.

1.5. QUALIFICATIONS

1.5.1. **Scheduler**:

1.5.1.1. Contractor shall retain a construction scheduler to work in enough capacity to perform all of the Contractor's requirements to prepare the Construction Schedule. The Scheduler shall plan, coordinate, execute, and monitor a cost/resource loaded CPM schedule as required for Project and have a minimum of five (5) years direct experience using Primavera Project Management.

1.5.1.2. Scheduler will cooperate with District and shall be available on site for monitoring, maintaining and updating schedules in a timely manner.

1.5.1.3. District has the right to reject the Scheduler based upon a lack of experience as required by this Document or based on lack of performance and timeliness of schedule submittals/fragments on past projects. Contractor shall within seven (7) calendar days of District's rejection, propose another scheduler who meets the experience requirements stated above.

1.5.2. **Administrative Personnel**: Five (5) years minimum experience in using and monitoring schedules on comparable projects.

1.6. SUBMITTALS

1.6.1. Submit Short Interval Schedule at each Construction Progress Meeting.

1.6.2. Submit Time Adjustment Schedule within five (5) days of commencement of a claimed delay.

1.6.3. Submit Recovery Schedules as required for timely completion of Work or when demanded by the District.

1.6.4. Submit job cost reports when demanded by the District.

1.6.5. Submit one (1) reproducible and two (2) copies of each schedule and cost report.

1.6.6. Submit large format plotted schedules monthly or at the request of the District or Construction Manager.

1.7. REVIEW AND EVALUATION

1.7.1. Contractor shall participate in joint review of Construction Schedule and Reports with District and Architect.

1.7.2. Within seven (7) days of receipt of District and/or Architect's comments provide satisfactory revision to Construction Schedule or adequate justification for activities in question.

1.7.3. In the event that an activity or element of Work is not detected by District or Architect review, such omission or error shall be corrected by next scheduled update and shall not affect Contract Time.

1.7.4. Acceptance by District of corrected Construction Schedule shall be a condition precedent to making any progress payments.

1.7.5. Cost-loaded values of Construction Schedule shall be basis for determining progress payments.

1.7.6. Review and acceptance by District and Architect of Preliminary Construction Schedule or Construction Schedule does not constitute responsibility whatsoever for accuracy or feasibility of schedules nor does such acceptance expressly or impliedly warrant, acknowledge or admit reasonableness of activities, logic, duration, manpower, cost or equipment loading stated or implied on schedules.

1.8. FORMAT

1.8.1. Prepare diagrams and supporting mathematical analyses using Precedence Diagramming Method, under concepts and methods outlined in AGC Construction Planning and Scheduling Manual, or other method pre-approved by District.

1.8.2. **Listings**: Reading from left to right, in ascending order for each activity.

1.8.3. **Diagram Size**: 42 inches maximum height x width required.

1.8.4. **Scale and Spacing**: To allow for legible notations and revisions.

1.8.5. Illustrate order and interdependence of activities and sequence of Work.

1.8.6. Illustrate complete sequence of construction by activity.

1.8.7. Provide legend of symbols and abbreviations used.

1.9. COST AND SCHEDULE REPORTS

1.9.1. **Activity Analysis**: Tabulate each activity of network diagram and identify for each activity:

1.9.1.1. Description.

1.9.1.2. Interface with outside contractors or agencies.

1.9.1.3. Number.

1.9.1.4. Preceding and following number.

1.9.1.5. Duration.

1.9.1.6. Earliest start date.

1.9.1.7. Earliest finish date.

1.9.1.8. Actual start date.

1.9.1.9. Actual finish date.

1.9.1.10. Latest start date.

1.9.1.11. Latest finish date.

1.9.1.12. Total and free float.

1.9.1.13. Identification of critical path activity.

1.9.1.14. Monetary value keyed to Schedule of Values.

1.9.1.15. Manpower requirements.

1.9.1.16. Responsibility.

1.9.1.17. Percentage complete.

1.9.1.18. Variance positive or negative.

1.9.2. **Cost Report**: Tabulate each activity of network diagram and identify for each activity:

1.9.2.1. Description.

1.9.2.2. Number.

1.9.2.3. Total cost.

1.9.2.4. Percentage complete.

1.9.2.5. Value prior to current period.

1.9.2.6. Value this period.

1.9.2.7. Value to date.

1.9.3. **Required Sorts**: List activities in sorts or groups:

1.9.3.1. By activity number.

1.9.3.2. By amount of float time in order of early start.

1.9.3.3. By responsibility in order of earliest start date.

1.9.3.4. In order of latest start dates.

1.9.3.5. In order of latest finish dates.

1.9.3.6. Application for payment sorted by Schedule of Values.

1.9.3.7. Listing of activities on critical path.

1.9.4. Listing of basic input data which generates schedule.

1.10. CONSTRUCTION SCHEDULE

1.10.1. Contractor shall develop and submit a cost loaded preliminary schedule of construction (or Preliminary Construction Schedule) as required by this Document and the Contract Documents. It shall be submitted in computer generated network format and shall be organized by Activity Codes representing the intended sequencing of the Work, and with time scaled network diagrams of activities. The Preliminary Construction Schedule shall include activities such as mobilization, preparation of submittals, specified review periods, procurement items, fabrication items, milestones, and all detailed construction activities.

1.10.2. Upon District's acceptance of the Preliminary Construction Schedule, Contractor shall update the accepted Preliminary Construction Schedule until Contractor's Construction Schedule is fully developed and accepted. Since updates to the Construction Schedule are the basis for payment to Contractor, submittal and acceptance of the Construction Schedule and updates shall be a condition precedent to making of monthly payments, as indicated in the General Conditions.

1.10.3. Failure to submit an adequate or accurate Preliminary Construction Schedule, Construction Schedule, updates thereto or failure to submit on established dates, will be considered a breach of Contract.

1.10.4. Failure to include any activity shall not be an excuse for completing all Work by required Completion Date.

1.10.5. Activities of long intervals shall be broken into increments no longer than fourteen (14) days or a value over $20,000.00, unless approved by the District or it is a non-construction activity for procurement and delivery.

1.10.6. The Construction Schedule shall comply with the following and include the following:

1.10.6.1. Provide a written narrative describing Contractor's approach to mobilization, procurement, and construction during the first thirty (30) calendar days including crew sizes, equipment and material delivery, Site access, submittals, and permits.

1.10.6.2. Shall designate critical path or paths.

1.10.6.3. Procurement activities to include mobilization, shop drawings and sample submittals.

1.10.6.4. Identification of key and long-lead elements and realistic delivery dates.

1.10.6.5. Construction activities in units of whole days limited to fourteen (14) days for each activity except non-construction activities for procurement and delivery.

1.10.6.6. Approximate cost and duration of each activity.

1.10.6.7. Shall contain seasonal weather considerations.

1.10.6.8. Indicate a date for Project Completion that is no later than Completion Date subject to any time extensions processed as part of a Change Order.

1.10.6.9. Conform to mandatory dates specified in the Contract Documents.

1.10.6.10. Contractor shall allow for inclement weather in the Proposed Baseline Schedule by incorporating an activity titled "Rain Day Impact Allowance" as the last activity prior to the Completion Milestone. No other activities may be concurrent with it. The duration of the Rain Day Impact Allowance activity will be in accordance with the Special Conditions, and will be calculated from the Notice to Proceed until the Completion.

1.10.6.11. Level of detail shall correspond to complexity of work involved.

1.10.6.12. Indicate procurement activities, delivery, and installation of District furnished material and equipment.

1.10.6.13. Designate critical path or paths.

1.10.6.14. Subcontractor work at all levels shall be included in schedule.

1.10.6.15. As developed, shall show sequence and interdependence of activities required for complete performance of Work.

1.10.6.16. Shall be logical and show a coordinated plan of Work.

1.10.6.17. Show order of activities and major points of interface, including specific dates of completion.

1.10.6.18. Duration of activities shall be coordinated with Subcontractors and suppliers and shall be best estimate of time required.

1.10.6.19. Shall show description, duration and float for each activity.

1.10.7. **Activity.** An activity shall meet the following criteria:

1.10.7.1. Any portion or element of Work, action, or reaction that is precisely described, readily identifiable, and is a function of a logical sequential process.

1.10.7.2. Descriptions shall be clear and concise. Beginning and end shall be readily verifiable. Starts and finishes shall be scheduled by logical restraints.

1.10.7.3. Responsibility shall be identified with a single performing entity.

1.10.7.4. Additional codes shall identify building, floor, bid opening and/or District's receipt of proposals, whichever is acceptable and CSI classification.

1.10.7.5. Assigned dollar value (cost-loading) of each activity shall cumulatively equal total contract amount. Mobilization, bond and insurance costs shall be separate. General requirement costs, overhead, profit, shall be prorated throughout all activities. Activity costs shall correlate with Schedule of Values.

1.10.7.6. Each activity shall have manpower-loading assigned.

1.10.7.7. Major construction equipment shall be assigned to each activity.

1.10.7.8. Activities labeled start, continue or completion are not allowed.

1.10.8. **Equipment and Materials.** For major equipment and materials show a sequence of activities including:

1.10.8.1. Preparation of shop drawings and sample submissions.

1.10.8.2. Review of shop drawings and samples.

1.10.8.3. Finish and color selection.

1.10.8.4. Fabrication and delivery.

1.10.8.5. Erection or installation.

1.10.8.6. Testing.

1.10.9. Include a minimum of fifteen (15) days prior to Completion Date for punch lists and clean up. No other activities shall be scheduled during this period.

1.11. SHORT INTERVAL SCHEDULE

1.11.1. The Four-Week Rolling Schedule shall be based on the most recent District Accepted Construction Schedule or Update. It shall include weekly updates to all construction, submittal, fabrication/procurement, and separate Work Contract activities. Contractor shall ensure that it accurately reflects the current progress of the Work.

1.11.2. Shall be fully developed horizontal bar-chart-type schedule directly derived from Construction Schedule.

1.11.3. Prepare schedule on sheet of sufficient width to clearly show data.

1.11.4. Provide continuous heavy vertical line identifying first day of week.

1.11.5. Provide continuous subordinate vertical line identifying each day of week.

1.11.6. Identify activities by same activity number and description as Construction Schedule.

1.11.7. Show each activity in proper sequence.

1.11.8. Indicate graphically sequences necessary for related activities.

1.11.9. Indicate activities completed or in progress for previous two (2) week period.

1.11.10. Indicate activities scheduled for succeeding three (3) week period.

1.11.11. Further detail should be added if necessary to monitor schedule or if requested by District.

1.12. REQUESTED TIME ADJUSTMENT SCHEDULE

1.12.1. Updated Construction Schedule shall not show a Completion Date later than the Contract Time, subject to any time extensions processed as part of a Change Order.

1.12.2. If an extension of time is requested, a separate schedule entitled "Requested Time Adjustment Schedule" shall be submitted to District and Architect.

1.12.3. Indicate requested adjustments in Contract Time which are due to changes or delays in completion of Work.

1.12.4. Extension request shall include forecast of Project Completion date and actual achievement of any dates listed in Contract Documents.

1.12.5. To the extent that any requests are pending at time of any Construction Schedule update, Time Adjustment Schedule shall also be updated.

1.12.6. Schedule shall be a time-scaled network analysis.

1.12.7. Accompany schedule with formal written time extension request and detailed impact analysis justifying extension.

1.12.8. Time impact analysis shall demonstrate time impact based upon date of delay, and status of construction at that time and event time computation of all affected activities. Event times shall be those as shown in latest Construction Schedule.

1.12.9. Activity delays shall not automatically constitute an extension of Contract Time.

1.12.10. Failure of Subcontractors shall not be justification for an extension of time.

1.12.11. Float is not for the exclusive use or benefit of any single party. Float time shall be apportioned according to needs of Project, as determined by the District.

1.12.12. Float suppression techniques such as preferential sequencing, special lead/lag logic restraints, extended activity durations, or imposed dates shall be apportioned according to benefit of Project.

1.12.13. Extensions will be granted only to extent that time adjustments to activities exceed total positive float of the critical path and extends Completion date.

1.12.14. District shall not have an obligation to consider any time extension request unless requirements of Contract Documents, and specifically, but not limited to these requirements, are complied with.

1.12.15. District shall not be responsible or liable for any construction acceleration due to failure of District to grant time extensions under Contract Documents should requested adjustments in Contract Time not substantially comply with submission and justification requirements of Contract for time extension requests.

1.12.16. In the event a Requested Time Adjustment Schedule and Time Impact Analysis are not submitted within ten (10) days after commencement of a delay it is mutually agreed that delay does not require a Contract Time extension.

1.13. RECOVERY SCHEDULE

1.13.1. When activities are behind Construction Schedule a supplementary Recovery Schedule shall be submitted.

1.13.2. Contractor shall prepare and submit to the District a Recovery Schedule whenever activities are behind Construction Schedule or at any time requested by the District, at no cost to the District.

1.13.3. Form and detail shall be sufficient to explain and display how activities will be rescheduled to regain compliance with Construction Schedule and to complete the Work by the Completion Date.

1.13.4. Maximum duration shall be one (1) month and shall coincide with payment period.

1.13.5. Ten (10) days prior to expiration of Recovery Schedule, Contractor shall have to show verification to determine if activities have regained compliance with Construction Schedule. Based upon this verification the following will occur:

1.13.5.1. Supplemental Recovery Schedule will be submitted to address subsequent payment period.

1.13.5.2. Construction Schedule will be resumed.

1.14. UPDATING SCHEDULES

1.14.1. Review and update schedules at least ten (10) days prior to submitting an Application for Payment.

1.14.2. Maintain schedules to record actual prosecution and progress.

1.14.3. Approved Change Orders which affect schedules shall be identified as separate new activities.

1.14.4. Change Orders of less than $5,000.00 value or less than three (3) days duration need not

be shown unless critical path is affected.

1.14.5. No other revisions shall be made to schedules unless authorized by District.

1.14.6. **Schedule Narrative Report**: Contractor shall include a written report to explain the Monthly Schedule Update. The narrative shall, at a minimum, include the following headings with appropriate discussions of each topic:

1.14.6.1. Activities or portions of activities completed during previous reporting period.

1.14.6.2. Actual start dates for activities currently in progress.

1.14.6.3. Deviations from critical path in days ahead or behind.

1.14.6.4. List of major construction equipment used during reporting period and any equipment idle.

1.14.6.5. Number of personnel by trade engaged on Work during reporting period.

1.14.6.6. Progress analysis describing problem areas.

1.14.6.7. Current and anticipated delay factors and their impact.

1.14.6.8. Proposed corrective actions and logic revisions for Recovery Schedule.

1.14.6.9. Proposed modifications, additions, deletions and changes in logic of Construction Schedule.

1.14.6.10. In updating the Schedule, Contractor shall not modify Activity ID numbers, schedule calculation rules/criteria, or the Activity Coding Structure required.

1.14.7. Schedule update will form basis upon which progress payments will be made.

1.14.8. District will not be obligated to review or process Application for Payment until the Construction Schedule and Schedule Narrative Report have been submitted.

1.15. DISTRIBUTION

1.15.1. Following joint review and acceptance of updated schedules distribute copies to District, Architect, and all other concerned parties.

1.15.2. Instruct recipients to promptly report in writing any problem anticipated by projections shown in schedules.

2. PRODUCTS

2.1. SCHEDULING SOFTWARE

Contractor shall utilize District-approved software and shall employ the Critical Path Method (CPM) in the development and maintenance of the Construction Schedule The scheduling software shall be capable of being resource loaded with manpower, costs and materials. It shall also be capable of generating time-scaled logic diagrams, resource histograms and profiles, bar charts, layouts and reports with any and/or

all activity detail.

2.2. ELECTRONIC DATA

Provide compact disk(s) that contain a back-up of the Proposed Baseline Schedule data on it and in a format approved by the District.

END OF DOCUMENT

SECTION 01 33 00 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

B. Consult individual sections of specifications for specific submittals required under those sections and for further details and descriptions of requirements.

C. Related Sections include the following:
   1. Division 1 Section "Payment Procedures" for submitting Applications for Payment and the Schedule of Values.
   2. Division 1 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes and for submitting Coordination Drawings.
   3. Division 1 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's Construction Schedule and the Submittals Schedule.
   4. Division 1 Section "Closeout Procedures" for submitting warranties.
   5. Division 1 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
   6. Division 1 Section "Operation and Maintenance Data" for submitting operation and maintenance manuals.
   7. Division 1 Section "Demonstration and Training" for submitting videotapes of demonstration of equipment and training of Owner's personnel.
   8. Other Sections for specific requirements for submittals in those Sections.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information that requires Architect's responsive action.

B. Informational Submittals: Written information that does not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.4 SUBMITTAL PROCEDURES

A. Processing: All costs for printing, preparing, packaging, submitting, mailing, or delivering submittals for initial submittals and all costs for re-printing, re-drawing, re-drafting, re-packaging, re-submitting, and re-mailing or re-delivering as required for all re-submittals shall be included in Contract Sum.

B. Sequence: Transmit each submittal in sequence which will not result in Architect's approval having to be later modified or rescinded by reason of subsequent submittals which should have been processed earlier or concurrently for coordination.

C. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
   1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
   2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
      a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

D. Submittals Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.

E. Multiple Reviews: The Contractor shall also be responsible for all costs to Architect or Architect consultants for reviews requiring more than 2 reviews for same specification section.

F. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
   1. Review: Allow 21 days for review of each submittal. Architect will request for more time if needed

G. Identification: Place a permanent label or title block on each submittal for identification.
   1. Indicate name of firm or entity that prepared each submittal on label or title block.

2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
3. Include the following information on label for processing and recording action taken:
    a. Project name.
    b. Date.
    c. Name and address of Architect.
    d. Name and address of Contractor.
    e. Name and address of subcontractor.
    f. Name and address of supplier.
    g. Name of manufacturer.
    h. Each submittal number shall be unique as follows:
        1) Format shall be as follows:
            a) Sequential Number - Revision Number - Project Specification Section Number (e.g., 1-1-09910). Do not use letters.
        2) Submittal number shall be sequential starting with 1 (e.g., 1-#-#####).
        3) First submittal for each section shall have number 1 as the "revision" number. (e.g., #-1-#####)
        4) Resubmittal for same specification section shall have same first digit as the original submittal and sequential second digit revision number (e.g., #-2-##### as in second submittal).
        5) Sample submittal log would look like the following in the submittal number column: Note that 1-2-09910 is second submittal.

Submittal Number
1-1-099100
1-2-099100 (revised submittal: shown for clarity)
2-1-055000
3-1-077200

    i. Number and title of appropriate Specification Section.
    j. Drawing number and detail references, as appropriate.
    k. Location(s) where product is to be installed, as appropriate.
    l. Other necessary identification.

H. Deviations: Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals.

I. Additional Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
1. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect.
2. Additional copies submitted for maintenance manuals will not be marked with action taken and will be returned.

J. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return submittals, without review, received from sources other than Contractor.
   1. Transmittal Form: Use AIA Document G810.

K. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
   1. Note date and content of previous submittal.
   2. Note date and content of revision in label or title block and clearly indicate extent of revision.
   3. Resubmit submittals until they are marked "Approved" or "Furnish as Noted".

L. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

M. Use for Construction: Use only final submittals with mark indicating approval by Architect.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. General: Prepare and submit Action Submittals required by individual Specification Sections.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
   1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
   2. Mark each copy of each submittal to show which products and options are applicable.
      a. Circle items applicable.
      b. Cross-out items not applicable.
      c. Select item number if required.
   3. Submittal data must include complete documentation relating to all the specified features
   4. Include the following information, as applicable:
      a. Manufacturer's Submittal Form with all the options selected when available.
      b. Manufacturer's written recommendations.
      c. Manufacturer's product specifications.
      d. Manufacturer's installation instructions.
      e. Standard color charts.

f. Manufacturer's catalog cuts.
g. Wiring diagrams showing factory-installed wiring.
h. Printed performance curves.
i. Operational range diagrams.
j. Mill reports.
k. Standard product operation and maintenance manuals.
l. Compliance with specified referenced standards.
m. Testing by recognized testing agency.
n. Application of testing agency labels and seals.
o. Notation of coordination requirements.

5. Submit Product Data before or concurrent with Samples.
6. Number of Copies: Submit 6 copies of Product Data, unless otherwise indicated. Architect will return 2 copies. Mark up and retain one returned copy as a Project Record Document.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
a. Dimensions.
b. Do not use words "by others." Use words which depict exactly who is responsible for the work.
c. Identification of products.
d. Fabrication and installation drawings.
e. Roughing-in and setting diagrams.
f. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
g. Shopwork manufacturing instructions.
h. Templates and patterns.
i. Schedules.
j. Design calculations.
k. Compliance with specified standards.
l. Notation of coordination requirements.
m. Notation of dimensions established by field measurement.
n. Relationship to adjoining construction clearly indicated.
o. Seal and signature of professional engineer if specified.
p. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
3. Number of Copies: Submit 4 sets of prints.

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
   1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
   2. Identification: Attach label on unexposed side of Samples that includes the following:
      a. Generic description of Sample.
      b. Product name and name of manufacturer.
      c. Sample source.
      d. Number and title of appropriate Specification Section.
   3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
      a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
      b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
   4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
      a. Number of Samples: Submit 1 full set of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
   5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
      a. Number of Samples: Submit three sets of Samples. Architect will retain two Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a Project Record Sample.
         1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.

2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

E. Product Schedule or List: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
1. Type of product. Include unique identifier for each product.
2. Number and name of room or space.
3. Location within room or space.
4. Number of Copies: Submit three copies of product schedule or list, unless otherwise indicated. Architect will return two copies.
a. Mark up and retain one returned copy as a Project Record Document.

F. Submittals Schedule: Comply with requirements specified in Division 1 Section "Construction Progress Documentation."

G. Application for Payment: Comply with requirements specified in Division 1 Section "Payment Procedures."

H. Schedule of Values: Comply with requirements specified in Division 1 Section "Payment Procedures."

2.2 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by other Specification Sections.
1. Number of Copies: Submit 2 copies of each submittal, unless otherwise indicated. Architect will not return copies.
2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
3. Test and Inspection Reports: Comply with requirements specified in Division 1 Section "Quality Requirements."

B. Coordination Drawings: Comply with requirements specified in Division 1 Section "Project Management and Coordination."

C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

D. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.

E. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

F. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

G. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

H. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

I. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

J. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

K. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
   1. Name of evaluation organization.
   2. Date of evaluation.
   3. Time period when report is in effect.
   4. Product and manufacturers' names.
   5. Description of product.
   6. Test procedures and results.
   7. Limitations of use.

L. Schedule of Tests and Inspections: Comply with requirements specified in Division 1 Section "Quality Requirements."

M. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed

before installation of product, for compliance with performance requirements in the Contract Documents.

N. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

O. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

P. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment.

Q. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

R. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
   1. Preparation of substrates.
   2. Required substrate tolerances.
   3. Sequence of installation or erection.
   4. Required installation tolerances.
   5. Required adjustments.
   6. Recommendations for cleaning and protection.

S. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
   1. Name, address, and telephone number of factory-authorized service representative making report.
   2. Statement on condition of substrates and their acceptability for installation of product.
   3. Statement that products at Project site comply with requirements.
   4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.

5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
6. Statement whether conditions, products, and installation will affect warranty.
7. Other required items indicated in individual Specification Sections.

T. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

2.3 DEFERRED APPROVALS AND DELEGATED DESIGN

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
   1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit 3 copies of a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
   1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
   1. Coordinate the work; do not delegate responsibility for coordination to any subcontractor.
   2. Anticipate the interrelationship of all subcontractors and their relationship with the total work.
   3. Resolve differences or disputes between subcontractors and materials suppliers concerning coordination, interference, or extent of work between sections.
   4. Trade submittals with “By Others”, “By General Contractor”, or similar coordination and work scope are not allowed. Identify, acknowledge, and resolve scope of work

prior to submittal by Contractor. No extras will be allowed. Provide complete and coordinated submittals.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action. Submittals without the Contractors review stamp will be returned without action, no additional time will be allowed for incomplete/ returned submittals.

B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken.

C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.

E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

F. Architect’s and Consultant’s review shall neither be construed as complete check nor relieve the Contractor, Subcontractor, manufacturer, fabricator, or supplier from responsibility for any deficiency that may exist or from any departures or deviations from the requirements of the Contract unless the Contractor has, in writing, called the Architect’s attention to the deviations at the time of submission as specified.

END OF SECTION

SECTION 01 40 00 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
   1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
   2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
   3. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

C. Related Sections include the following:
   1. Division 1 Section "Construction Progress Documentation" for developing a schedule of required tests and inspections.
   2. Other Sections for specific test and inspection requirements.

1.3 DEFINITIONS

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work

and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.

C. Mockups:
   1. Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Approved mockups establish the standard by which the Work will be judged.
   2. Comprehensive, completely integrated mockups of separate trades showing interface conditions, transitions, and relationships between materials and finishes.

D. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.

E. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.

F. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

G. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

H. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
   1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.

I. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of 5 previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels,

comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.5 SUBMITTALS

A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
1. Specification Section number and title.
2. Description of test and inspection.
3. Identification of applicable standards.
4. Identification of test and inspection methods.
5. Number of tests and inspections required.
6. Time schedule or time span for tests and inspections.
7. Entity responsible for performing tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

C. Reports: Prepare and submit certified written reports that include the following:
1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and re-inspecting.

D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.6 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

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

E. Professional Engineer Qualifications: A licensed professional engineer who is legally qualified to practice in California and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
   1. Requirement for specialists shall not supersede building codes and regulations governing the Work.

G. Testing Agency Qualifications: An DSA approved NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
   1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.

2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

H. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

I. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
2. Notify Architect 7 days in advance of dates and times when mockups will be constructed.
3. Demonstrate the proposed range of aesthetic effects and workmanship.
4. Obtain Architect's approval of mockups before starting work, fabrication, or construction.
5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
6. Demolish and remove mockups when directed, unless otherwise indicated.

1.7 QUALITY CONTROL

A. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 1 Section "Submittal Procedures."

B. Retesting/Re-inspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and re-inspecting, for construction that replaced Work that failed to comply with the Contract Documents.

C. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.

5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspecting equipment at Project site.

D. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
   1. Schedule times for tests, inspections, obtaining samples, and similar activities.

E. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Submit schedule within 30 days of date established for commencement of the Work.
   1. Distribution: Distribute schedule to Owner, Architect, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Prepare a record of tests and inspections. Include the following:
   1. Date test or inspection was conducted.
   2. Description of the Work tested or inspected.
   3. Date test or inspection results were transmitted to Architect.
   4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.

3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
   1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01 40 00

SECTION 01 42 00 - REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes list of references.

1.3 DEFINITIONS

A. General: Basic Contract definitions are included in the Conditions of the Contract.

B. “AHJ”: Agency having jurisdiction.

C. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.

D. “Compatible”: When used for products, it shall comply with requirements including products recommended/ required by the manufacturer for warrantee acceptance.

E. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "approved," "required," and "permitted" have the same meaning as "directed."

F. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

G. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

H. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

I. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

J. "Owner": As defined in Division 1 section "Summary".

K. "Provide": Furnish and install, complete and ready for the intended use.

L. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.4 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of date of the Contract Documents, unless otherwise indicated.

C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
   1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.
   2. Copies of standards and applicable building codes (Title 24 Parts 1-6 and 9) shall be kept on-site during construction.

D. Abbreviations and Acronyms for Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations.

E. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized names.

F. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized names.

G. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized names.

1.5 QUALITY ASSURANCE

A. Reference Standards: (Effective January 1, 2023) The 2022 Code of Regulations CCR, CFC, CMC, CPC, CEC Govern
   1. Title 19 CCR, Public Safety, State Fire Marshall Regulations
   2. Title 24 CCR, Part 1 - 2022 Building Standards Administrative Code
   3. Title 24 CCR, Part 2 - 2022 California Building Code, VOL. 1&2 (CBC) (2021 IBC, as Amended by CA)
   4. Title 24 CCR, Part 3 - 2022 California Electrical Code (CEC) (2020 NEC, as Amended by CA)
   5. Title 24 CCR, Part 5 - 2022 California Plumbing Code (CPC) (2021 IAPMO UPC, as Amended by CA)
   6. Title 24 CCR, Part 6 - 2022 California Energy Code
   7. Title 24 CCR, Part 9 - 2022 California Fire Code (CFC) (2021 IFC, as Amended by CA
   8. Title 24 CCR, Part 11 - 2022 California Green Building Standards Code (Calgreen Code)
   9. Title 24 CCR, Part 12 - 2022 California Reference Standards (Partial List)
   10. NFPA 101- Life Safety Code. 2021 Edition
   11. 2022 ADA Standards for Accessible Design
   12. Americans with Disabilities Act (ADA), Title II or Title III.

B. California Referenced Standards Title 24 CCR, Part 12 - 2022 (partial list)
   1. NFPA 13 - Automatic Sprinkler Systems (California Amended), 2019 Edition.
   2. NFPA 17 - Dry Chemical Extinguishing Systems, 2021 Edition.
   3. NFPA 24 - Private Fire Service Mains (California Amended), 2018 Edition.
   4. NFPA 72 - National Fire Alarm and Signaling Code (California Amended) 2022 Edition (Note: See UL Standard 1971 for "Visual Devices").
   5. NFPA 80 - Fire Door and Other Opening Protectives, 2019 Edition.
   6. NFPA 101- Life Safety Code. 2021 Edition
   7. NFPA 105 – Standard for Smoke Door Assemblies and Other Opening Protectives, 2019 Edition
   8. NFPA 252 – Standard Methods of Fire Tests of Door Assemblies
   9. 2019 California Access Compliance Advisory Reference Manual
   10. Americans with Disabilities Act (ADA), Title II or Title III.
   11. UL 300 – Standard for Testing of Fire Extinguishing Equipment for Protection of Commercial Cooking Equipment.
   12. Ul 464 – Audible for Fire Alarm and Signaling Systems. Including Accessories
   13. UL 521 – Standard for Heat Detectors for Fire Protective Signaling Systems (2005 edition).
   14. UL 1971 Standard for Signaling Devices for the Hearing Impaired (2002-2010)
   15. Refer to 2022 CBC (SFM) Chapter 35 and California Fire Code Chapter 80 for a complete list of applicable NFA Standards.
   16. 2022 California Access Compliance Advisory Reference Manual

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 42 00

DOCUMENT 01 42 13

ABBREVIATIONS AND ACRONYMS

1. GENERAL

1.1. RELATED DOCUMENTS AND PROVISIONS

Contractor shall review all Contract Documents for applicable provisions related to the provisions in this document, including without limitation:

1.1.1. General Conditions including without limitation, Contract Terms and Definitions; and

1.1.2. Special Conditions (if any);

1.1.3. Supplemental Conditions (if any).

1.2. ABBREVIATIONS AND ACRONYMS FOR STANDARDS AND REGULATIONS

1.2.1. Abbreviations and Acronyms for Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations as indicated in Thomson Gale™ (www.gale.com), Gale Research's "Encyclopedia of Associations" or "Encyclopedia of Associations: National Organizations of the U.S," or in Columbia Books' "National Trade & Professional Associations of the U.S."

1.2.2. Some of the applicable abbreviations and acronyms referenced in the Specifications or other Contract Documents have the following meanings, subject to updates or revisions based on the above-referenced publications:

- AA: Aluminum Association
- AAMA: Architectural Aluminum Manufacturers Association
- AASHTO: American Association of State Highway and Transportation Officials
- ABPA: Acoustical and Board Products Association
- ACI: American Concrete Institute
- AGA: American Gas Association
- AGC: Associated General Contractors
- AHC: Architectural Hardware Consultant
- AI: Asphalt Institute
- AIA: American Institute of Architects
- AIEE: American Institute of Electrical Engineers
- AISC: American Institute of Steel Construction
- AISI: American Iron and Steel Institute
- AMCA: Air Moving and Conditioning Association
- ANSI: American National Standards Institute
- APA: American Plywood Association
- ARI: Air Conditioning and Refrigeration Institute
- ASHRAE: American Society of Heating, Refrigeration and Air Conditioning Engineers
- ASME: American Society of Mechanical Engineers
- ASSE: American Society of Structural Engineers
- ASTM: American Society of Testing and Materials
- AWPB: American Wood Preservers Bureau

- AWPI: American Wood preservers Institute
- AWS: American Welding Society
- AWSC: American Welding Society Code
- AWI: Architectural Woodwork Institute
- AWWA: American Water Works Association
- BIA: Brick Institute of America
- CCR: California Code of Regulations
- CLFMI: Chain Link Fence Manufacturers Institute
- CMG: California Masonry Guild
- CRA: California Redwood Association
- CRSI: Concrete Reinforcing Steel Institute
- CS: Commercial Standards
- CSI: Construction Specifications Institute
- CTI: Cooling Tower Institute
- FGMA: Flat Glass Manufacturer's Association
- FIA: Factory Insurance Association
- FM: Factory Mutual
- FS: Federal Specification
- FTI: Facing Title Institute
- GA: Gypsum Association
- ICC: International Code Council
- IEEE: Institute of Electrical and Electronic Engineers
- IES: Illumination Engineering Society
- LIA: Lead Industries Association
- MIA: Marble Institute of America
- MLMA: Metal Lath Manufacturers Association
- MS: Military Specifications
- NAAMM: National Association of Architectural Metal Manufacturers
- NBHA: National Builders Hardware Association
- NBFU: National Board of Fire Underwriters
- NBS: National Bureau of Standards
- NCMA: National Concrete Masonry Association
- NEC: National Electrical Code
- NEMA: National Electrical Manufacturers Association
- NFPA: National Fire Protection Association/National Forest Products Association
- NMWIA: National Mineral Wool Insulation Association
- NTMA: National Terrazzo and Mosaic Association
- NWMA: National Woodwork Manufacturer's Association
- ORS: Office of Regulatory Services (California)
- OSHA: Occupational Safety and Health Act
- PCI: Precast Concrete Institute
- PCA: Portland Cement Association
- PDCA: Painting and Decorating Contractors of America
- PDI: Plumbing Drainage Institute
- PEI: Porcelain Enamel Institute
- PG&E: Pacific Gas & Electric Company
- PS: Product Standards
- SDI: Steel Door Institute; Steel Deck Institute
- SJI: Steel Joist Institute
- SSPC: Steel Structures Painting Council
- TCA: Tile Council of America

- TPI: Truss Plate Institute
- UBC: Uniform Building Code
- UL: Underwriters Laboratories Code
- UMC: Uniform Mechanical Code
- USDA: United States Department of Agriculture
- VI: Vermiculite Institute
- WCLA: West Coast Lumberman's Association
- WCLB: West Coast Lumber Bureau
- WEUSER: Western Electric Utilities Service Engineering Requirements
- WIC: Woodwork Institute of California
- WPOA: Western Plumbing Officials Association

1.2.3. Additional Abbreviations and Symbols: Refer to the above-referenced publications or to Drawings for additional abbreviations and for symbols.

END OF DOCUMENT

DOCUMENT 01 42 16

GENERAL DEFINITIONS AND REFERENCES

1. GENERAL

1.1. RELATED DOCUMENTS AND PROVISION

Contractor shall review all Contract Documents for applicable provisions related to the provisions in this document, including without limitation:

1.1.1. General Conditions including without limitation, Contract Terms and Definitions;

1.1.2. Special Conditions (if any);

1.1.3. Supplemental Conditions (if any); and

1.1.4. Special Conditions.

1.2. DEFINITIONS

General: Basic Contract definitions are included in the General Conditions of the Contract for Construction. The following are in addition to those definitions.

1.2.1. "Alternate": A cost or credit for certain Work that may be added to or deducted from the Project.

1.2.2. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

1.2.3. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

1.2.4. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

1.2.5. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

1.2.6. "Provide": Furnish and install, complete and ready for the intended use.

1.3. QUALITY ASSURANCE

1.3.1. For products or workmanship specified by association, trade, or Federal Standards, Contractor shall comply with requirements of the standard, except when more stringent requirements are specified in the Contract Documents, or are required by applicable codes.

1.3.2. Contractor shall conform to current reference standard publication in effect on the date of bid opening.

1.3.3. Unless directed otherwise by the Contract Documents, Contractor shall obtain copies of referenced standards.

1.3.4. Unless directed otherwise by the Contract Documents, Contractor shall maintain a copy of referenced standards at jobsite until Completion.

1.3.5. If specified standards conflict with Contract Documents, Contractor shall request clarification from the District or the Architect before proceeding.

1.3.6. Governing Codes shall be as shown in the Contract Documents including, without limitation, the Specifications.

1.4. STANDARDS

1.4.1. Standard Specifications: References to codes, specifications and standards referred to in the Contract Documents shall mean, and are intended to be, the latest edition, amendment or revision of such reference standard in effect as of the date of these Contract Documents. If those standard specifications are revised prior to Completion of any part of the Work to which such revision would pertain, Contractor may, if acceptable to and approved by the District, perform such Work in accordance with the revised standard specifications.

1.4.2. Conflicting Requirements: Where compliance with two or more standards is specified, and the standards may establish different or conflicting requirements for minimum quantities or quality levels, refer requirements that are different, but apparently equal, and uncertainties to the District for a decision before proceeding.

1.4.3. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of the requirements. Refer uncertainties to District for a decision before proceeding.

1.4.4. Copies of Standards: Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to that entity's construction activity. Copies of applicable standards are not bound with the Contract Documents.

1.4.5. Copies from the Publication Source: Where copies of standards are needed for performance of a required construction activity, Contractor shall obtain copies directly from the publication source.

1.5. SCHEDULE OF REFERENCES

The following information is intended only for the general assistance of Contractor. District does not represent the accuracy of the information. Contractor shall independently verify the information for each entity listed below:

AA	Aluminum Association 900 19th Street NW, Suite 300 Washington, DC 20006 www.aluminum.org	202/862-5100
AABC	Associated Air Balance Council 1518 K Street, NW, Suite 503	202/737-0202

	Washington, DC 20005 www.aabchq.com	
AAMA	American Architectural Manufacturers Association 1827 Walden Office Sq., Suite 104 Schaumburg, IL 60173-4268 www.aamanet.org	847/303-5664
AASHTO	American Association of State Highway and Transportation Officials 444 North Capitol Street, Suite 249 Washington, DC 20001 www.aashto.org	202/624-5800
AATCC	American Association of Textile Chemists and Colorists P.O. Box 12215 One Davis Drive Research Triangle Park, NC 27709-2215 www.aatcc.org	919/549-8141
ACI	American Concrete Institute P.O. Box 9094 Farmington Hills, MI 48333-9094 www.aci-int.org	248/848-3700
ACPA	American Concrete Pipe Association 222 West Las Colinas Blvd., Suite 641 Irving, TX 75039-5423 www.concrete-pipe.org	972/506-7216
ADC	Air Diffusion Council 11 South LaSalle St., Suite 1400 Chicago, IL 60603 http://www.flexibleduct.org/index.asp	312/201-0101
AFPA	American Forest and Paper Association 1111 19th St., NW, Suite 800 Washington, DC 20036 http://www.afandpa.org/	202/463-2700
AGA	American Gas Association 1515 Wilson Blvd. Arlington VA 22209 www.aga.com	703/841-8400
AHA	American Hardboard Association 1210 W. Northwest Hwy Palatine, IL 60067-1897 http://domensino.com/AHA/default.htm	847/934-8800
AI	Asphalt Institute Research Park Drive P.O. Box 14052 Lexington, KY 40512-4052	606/288-4960

	www.asphaltinstitute.org	
AIA	The American Institute of Architects 1735 New York Avenue, NW Washington, DC 20006-5292 www.aia.org	202/626-7300
AISC	American Institute of Steel Construction One East Wacker Drive, Suite 3100 Chicago, IL 60601-2001 http://www.aisc.org/	800/644-2400
AITC	American Institute of Timber Construction 7012 S. Revere Pkwy., Suite 140 Englewood, CO 80112 www.aitc-glulam.org	303/792-9559
ALCA	Associated Landscape Contractors of America 12200 Sunrise Valley Drive, Suite 150 Reston, VA 20191 www.alca.org	703/620-6363
ALI	Associated Laboratories, Inc. P.O. Box 152837 1323 Wall St. Dallas, TX 75315 http://www.assoc-labs.com/	214/565-0593
ALSC	American Lumber Standards Committee P.O. Box 210 Germantown, MD 20875	301/972-1700
AMCA	Air Movement and Control Association International, Inc. 30 W. University Drive Arlington Heights, IL 60004-1893 www.amca.org	847/394-0150
ANLA	American Nursery and Landscape Association 1250 Eye Street, NW, Suite 500 Washington, DC 20005	202/789-2900
ANSI	American National Standards Institute 11 West 42nd Street, 13th Floor New York, NY 10036-8002 www.ansi.org	212/642-4900
APA	APA-The Engineered Wood Association P.O. Box 11700 Tacoma, WA 98411-0700 www.apawood.org	206/565-6600
APA	Architectural Precast Association P.O. Box 08669 Fort Myers, FL 33908-0669	941/454-6989

ARI	Air Conditioning and Refrigeration Institute 4301 Fairfax Drive, Suite 425 Arlington, VA 22203 www.ari/org	703/524-8800
ARMA	Asphalt Roofing Manufacturers Association Center Park 4041 Powder Mill Road, Suite 404 Calverton, MD 20705	301/231-9050
ASA	Acoustical Society of America 500 Sunnyside Blvd. Woodbury, NY 11797	516/576-2360
ASCE	American Society of Civil Engineers- World Headquarters 1801 Alexander Bell Drive Reston, VA 20190-4400 www.asce.org	800/548-2723 703/295-6000
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers 1791 Tullie Circle, NE Atlanta, GA 30329-2305 www.ashrae.org	800/527-4723 404/636-8400
ASLA	American Society of Landscape Architects 4401 Connecticut Ave., NW, 5th Floor Washington, DC 20008-2369 www.asla.org	202/686-2752
ASME	American Society of Mechanical Engineers 345 East 47th Street New York, NY 10017-2392 www.asme.org	800/434-2763
ASPE	American Society of Plumbing Engineers 3617 Thousand Oaks Blvd., Suite 210 Westlake, CA 91362-3649	805/495-7120
ASQC	American Society for Quality Control 611 E. Wisconsin Avenue Milwaukee, WI 53201-3005 www.asqc.org	800/248-1946 414/272-8575
ASSE	American Society of Sanitary Engineering 28901 Clemens Road Westlake, OH 44145 www.asse-plumbing.org	216/835-3040
ASTM	American Society for Testing and Materials 100 Barr Harbor Drive West Conshohocken, PA 19428-2959 www.astm.org	610/832-9500

AWCI	Association of the Wall and Ceiling Industries--International 307 E. Annandale Road, Suite 200 Falls Church, VA 22042-2433 www.awci.org	703/534-8300
AWPA	American Wood-Preservers' Association 3246 Fall Creek Highway, Suite 1900 Granbury, TX 76049-7979	817/326-6300
AWS	American Welding Society 550 NW LeJeune Road Miami, FL 33126 www.amweld.org	800/443-9373 305/443-9353
AWWA	American Water Works Association 6666 West Quincy Avenue Denver, CO 80235 www.awwa.org	800/926-7337 303/794-7711
BHMA	Builders' Hardware Manufacturers Association 355 Lexington Avenue, 17th Floor New York, NY 10017-6603	212/661-4261
CBM	Certified Ballast Manufacturers Association 1422 Euclid Avenue, Suite 402 Cleveland, OH 44115-2094	216/241-0711
CGA	Compressed Gas Association 1725 Jefferson Davis Hwy, Suite 1004 Arlington, VA 22202-4102 www.cganet.com	703/412-0900
CISCA	Ceilings & Interior Systems Construction Association 1500 Lincoln Hwy, Suite 202 St. Charles, IL 60174 www.cisca.org	630/584-1919
CISPI	Cast Iron Soil Pipe Institute 5959 Shallowford Road, Suite 419 Chattanooga, TN 37421	423/892-0137
CPSC	Consumer Product Safety Commission East West Towers 4330 East-West Hwy. Bethesda, MD 20814	800/638-2772
CPPA	Corrugated Polyethylene Pipe Association 432 N. Superior Street Toledo, OH 43604	800/510-2772 419/241-2221
CRA	California Redwood Association 405 Enfrente Drive, Suite 200	415/382-0662

	Novato, CA 94949	
CRI	Carpet and Rug Institute 310 S. Holiday Avenue Dalton, GA 30722-2048 www.carpet-rug.com	800/882-8846 706/278-3176
CRSI	Concrete Reinforcing Steel Institute 933 N. Plum Grove Road Schaumburg, IL 60173-4758 www.crsi.org	847/517-1200
CTI	Ceramic Tile Institute of America 12061 W. Jefferson Blvd. Culver City, CA 90230-6219	310/574-7800
DHI	Door and Hardware Institute 14170 Newbrook Drive Chantilly, VA 20151-2223 www.dhi.org	703/222-2010
DIPRA	Ductile Iron Pipe Research Association 245 Riverchase Pkwy East, Suite O Birmingham, AL 35244	205/988-9870
DOC	Department of Commerce 14th Street and Constitution Avenue, NW Washington, DC 20230	202/482-2000
DOT	Department of Transportation 400 Seventh Street, SW Washington, DC 20590	202/366-4000
EJMA	Expansion Joint Manufacturers Association 25 N. Broadway Tarrytown, NY 10591-3201	914/332-0040
EPA	Environmental Protection Agency 401 M Street, SW Washington, DC 20460	202/260-2090
FCICA	Floor Covering Installation Contractors Association P.O. Box 948 Dalton, GA 30722-0948	706/226-5488
FM	Factory Mutual 1151 Boston-Providence Turnpike P.O. Box 9102 Norwood, MA 02062-9102 www.factorymutual.com	781/255-4300
FS	Federal Specifications Unit (Available from GSA) 470 East L'Enfant Plaza, SW, Suite 8100	202/619-8925

	Washington, DC 20407	
GA	Gypsum Association 810 First Street NE, Suite 510 Washington, DC 20002 www.usg.com	202/289-5440
GANA	Glass Association of North America 3310 SW Harrison Street Topeka, KS 66611-2279 www.glasswebsite.com/gana	913/266-7013
HMA	Hardwood Manufacturers Association 400 Penn Center Blvd., Suite 530 Pittsburgh, PA 15235-5605 www.hardwood.org	412/828-0770
HPVA	Hardwood Plywood and Veneer Association 1825 Michael Farraday Drive P.O. Box 2789 Reston, VA 22195-0789 www.hpva.org	703/435-2900
IEEE	Institute of Electrical and Electronic Engineers 345 E. 47th Street New York, NY 10017-2394 www.ieee.org	800/678-4333 212/705-7900
IESNA	Illuminating Engineering Society of North America 120 Wall Street, 17th Floor New York, NY 10005-4001 www.iesna.org	212/248-5000
ITS	Intertek Testing Services P.O. Box 2040 607/753-6711 3933 US Route 11 Cortland, NY 13045-7902 www.itsglobal.com	800/345-3851
LMA	Laminating Materials Association 116 Lawrence Street Hillsdale, NJ 07642-2730 www.lma.org	201/664-2700
MCAA	Mechanical Contractors Association of America 1385 Piccard Drive Rockville, MD 20850-4329	301/869-5800
ML/SFA	Metal Lath/Steel Framing Association (A Division of the NAAMM) 8 South Michigan Avenue, Suite 1000 Chicago, IL 60603	312/456-5590
MSS	Manufacturers Standardization Society for the Valve and Fittings Industry	703/281-6613

	127 Park Street, NE Vienna, VA 22180-4602	
NAA	National Arborist Association P.O. Box 1094 603/673-3311 Amherst, NH 03031-1094 www.natlarb.com	800/733-2622
NAAMM	National Association of Architectural Metal Manufacturers 8 South Michigan Avenue, Suite 1000 Chicago, IL 60603 www.gss.net/naamm	312/782-5590
NAIMA	North American Insulation Manufacturers Association 44 Canal Center Plaza, Suite 310 Alexandria, VA 22314 www.naima.org	703/684-0084
NAPA	National Asphalt Pavement Association NAPA Building 5100 Forbes Blvd. Lanham, MD 20706-4413	301/731-4748
NCSPA	National Corrugated Steel Pipe Association 1255 23rd Street, NW, Suite 850 Washington, DC 20037 www.ncspa.org	202/452-1700
NEBB	National Environmental Balancing Bureau 8575 Grovemont Circle Gaithersburg, MD 20877-4121	301/977-3698
NECA	National Electrical Contractors Association 3 Bethesda Metro Center, Suite 1100 Bethesda, MD 20814-5372	301/657-3110
NEI	National Elevator Industry 185 Bridge Plaza North, Suite 310 Fort Lee, NJ 07024	201/944-3211
NEMA	National Electrical Manufacturers' Association 1300 N. 17th Street, Suite 1847 Rosslyn, VA 22209 www.nema.org	703/841-3200
NFPA	National Fire Protection Association One Batterymarch Park P.O. Box 9101 Quincy, MA 02269-9101 www.nfpa.org	800/344-3555 617/770-3000
NHLA	National Hardwood Lumber Association P.O. Box 34518	901/377-1818

	Memphis, TN 38184-0518 www.natlhardwood.org	
NIA	National Insulation Association 99 Canal Center Plaza, Suite 222 Alexandria, VA 22314 www.insulation.org	703/683-6422
NPA	National Particleboard Association 18928 Premiere Court Gaithersburg, MD 20879-1569 www.pbmdf.com	301/670-0604
NPCA	National Paint and Coatings Association 1500 Rhode Island Avenue, NW Washington, DC 20005-5597 www.paint.org	202/462-6272
NRCA	National Roofing Contractors Association O'Hare International Center 10255 W. Higgins Road, Suite 600 Rosemont, IL 60018-5607 www.roofonline.org	800/323-9545
NRMCA	National Ready Mixed Concrete Association 900 Spring Street Silver Spring, MD 20910 www.nrmca.org	301/587-1400
NSF	NSF International P.O. Box 130140 Ann Arbor, MI 48113-0140 www.nsf.org	313/769-8010
NUSIG	National Uniform Seismic Installation Guidelines 12 Lahoma Court Alamo, CA 94526	510/946-0135
NWWDA	National Wood Window and Door Association 1400 E. Touhy Avenue, G-54 Des Plaines, IL 60018 www.nwwda.org	800/223-2301 847/299-5200
SHA	Occupational Safety and Health Administration (U.S. Department of Labor) 200 Constitution Ave., NW Washington, DC 20210	202/219-8148
PCA	Portland Cement Association 5420 Old Orchard Road Skokie, IL 60077-1083 www.portcement.org	847/966-6200
PDCA	Painting and Decorating Contractors of America	800/332-7322 703/359-0826

	3913 Old Lee Hwy, Suite 33-B Fairfax, VA 22030 www.pdca.com	
PDI	Plumbing and Drainage Institute 45 Bristol Drive, Suite 101 South Easton, MA 02375	800/589-8956 508/230-3516
RFCI	Resilient Floor Covering Institute 966 Hungerford Drive, Suite 12-B Rockville, MD 20805-1714	301/340-8580
RIS	Redwood Inspection Service c/o California Redwood Association 405 Enfrente Drive, Suite 200 Novato, CA 94949-7206	415/382-0662
SDI	Steel Deck Institute P.O. Box 25 Fox River Grove, IL 60012 www.sdi.org	847/462-1930
SDI	Steel Door Institute 30200 Detroit Road Cleveland, OH 44145-1967	216/889-0010
SMA	Stucco Manufacturers Association 14006 Ventura Blvd. Sherman Oaks, CA 91403	213/789-8733
SMACNA	Sheet Metal and Airconditioning Contractors National Association, Inc. P.O. Box 221230 Chantilly, VA 20151-1209 www.smacna.org	703/803-2980
SPI	Society of the Plastics Industry, Inc. Spray Polyurethane Division 1801 K Street, NW, Suite 600K Washington, DC 20006 www.socplas.org	800/951-2001 202/974-5200
SSPC	Steel Structures Painting Council 40 24th Street, 6th Floor Pittsburgh, PA 15222-4643	412/281-2331
TCA	Tile Council of America 100 Clemson Research Blvd. Anderson, SC 29625	864/646-8453
TPI	Turfgrass Producers International 1855-A Hicks Road Rolling Meadows, IL 60008	800/405-8873 847/705-9898
UL	Underwriters Laboratories, Inc.	800/704-4050

	333 Pfingston Road Northbrook, IL 60062 www.ul.com	847/272-8800
UNI	Uni-Bell PVC Pipe Association 2655 Villa Creek Drive, Suite 155 Dallas, TX 75234 www.members.aol.com/unibell1	972/243-3902
USDA	U.S. Department of Agriculture 14th St. and Independence Ave., SW Washington, DC 20250	202/720-8732
WA	Wallcoverings Association 401 N. Michigan Avenue Chicago, IL 60611-4267	312/644-6610
WCLIB	West Coast Lumber Inspection Bureau P.O. Box 23145 Portland, OR 97281-3145	503/639-0651
WCMA	Window Covering Manufacturers Association 355 Lexington Ave., 17th Floor New York, NY 10017-6603	212/661-4261
WIC	Woodwork Institute of California P.O. Box 980247 West Sacramento, CA 95798-0247	916/372-9943
WLPDIA	Western Lath/Plaster/Drywall Industries Association 8635 Navajo Road San Diego, CA 92119	619/466-9070
WMMPA	Wood Moulding & Millwork Producers Association 507 First Street Woodland, CA 95695 www.wmmpa.com	800/550-7889 916/661-9591
WRI	Wire Reinforcement Institute 203 Loudoun Street, SW Leesburg, VA 20175-2718	703/779-2339
WWPA	Western Wood Products Association Yeon Building 522 S.W. 5th Avenue Portland, OR 97204-2122	503/224-3930

END OF DOCUMENT

DOCUMENT 01 50 00

TEMPORARY FACILITIES AND CONTROLS

1. GENERAL

1.1. RELATED DOCUMENTS AND PROVISIONS

Contractor shall review all Contract Documents for applicable provisions related to the provisions in this document, including without limitation:

1.1.1. General Conditions;

1.1.2. Special Conditions (if any);

1.1.3. Supplemental Conditions (if any);

1.1.4. Site Standards; and

1.1.5. Temporary Tree and Plant Protection.

1.2. TEMPORARY UTILITIES

1.2.1. **Electric Power and Lighting**:

1.2.1.1. Contractor will furnish and pay for power during the course of the work to the extent power is not in the building(s) or on the Site. Contractor shall be responsible for providing temporary facilities required on the Site to point of intended use.

1.2.1.2. Contractor shall furnish, wire for, install, and maintain temporary electrical lights wherever it is necessary to provide illumination for the proper performance and/or observation of the Work: a minimum of 20 foot-candles for rough work and 50 foot-candles for finish work.

1.2.1.3. Contractor shall be responsible for maintaining existing lighting levels in the Project vicinity should temporary outages or service interruptions occur.

1.2.2. **Heat and Ventilation**:

1.2.2.1. Contractor shall provide temporary heat to maintain environmental conditions to facilitate progress of the Work, to meet specified minimum conditions for the installation and curing of materials, and to protect materials and finishes from damage due to improper temperature and humidity conditions. Portable heaters shall be standard units complete with controls.

1.2.2.2. Contractor shall provide forced ventilation and dehumidification, as required, of enclosed areas for proper installation and curing of materials, to disperse humidity, and to prevent hazardous accumulations of dust, fumes, vapors, and gases.

1.2.2.3. Contractor shall pay the costs of installation, maintenance, operation, and removal of temporary heat and ventilation, including costs for fuel consumed, required for the performance of the Work.

1.2.3. **Water**:

1.2.3.1. Contractor will furnish and pay for water during the course of the work. Contractor shall be responsible for providing temporary facilities required.

1.2.3.2. Contractor shall make potable water available for human consumption.

1.2.4. **Sanitary Facilities**:

1.2.4.1. Contractor shall provide sanitary temporary facilities in no fewer numbers than required by law and such additional facilities as may be directed by the Inspector for the use of all workers. The facilities shall be maintained in a sanitary condition at all times and shall be left at the Site until removal is directed by the District or Contractor completes all Work.

1.2.4.2. Use of toilet facilities in the Site shall not be permitted except by consent of the Project Inspector and District.

1.2.5. **Telephone Service**:

1.2.5.1. Contractor shall arrange with local telephone service company for telephone service for the performance of the Work. Contractor shall, at a minimum, provide in its field office one line for telephone and one line for fax machine.

1.2.5.2. Contractor shall pay the costs for telephone and fax lines installation, maintenance, service, and removal; for Construction Site Office, Construction Manager's Office and Inspector's Office.

1.2.6. **Fire Protection:**

1.2.6.1. Contractor shall provide and maintain fire extinguishers and other equipment for fire protection. Such equipment shall be designated for use for fire protection only and shall comply with all requirements of the California Fire, State Fire Marshall and/or its designee.

1.2.6.2. Where on-site welding and burning of steel is unavoidable, Contractor shall provide protection for adjacent surfaces.

1.2.7. **Trash Removal:**

1.2.7.1. Contractor shall provide trash removal on a timely basis from all Site Offices and throughout the Site.

1.2.8. **Temporary Facilities:**

1.2.8.1. Contractor shall provide sufficient space and facilities for its own force's needs.

1.2.8.2. In addition, unless otherwise indicated in the Contract Documents, Contractor shall provide the following facilities, trailers, offices, furniture and:

1.2.8.2.1. Basic furniture: chair, desks, plan table, conference room table, and chairs; and

1.2.8.2.2. Basic services: fixed line for phone, fax, and high speed internet service.

1.3. CONSTRUCTION AIDS

1.3.1. **Plant and Equipment:**

1.3.1.1. Contractor shall furnish, operate, and maintain a complete plant for fabricating, handling, conveying, installing, and erecting materials and equipment; and for conveyances for transporting workmen. Include elevators, hoists, debris chutes, and other equipment, tools, and appliances necessary for performance of the Work.

1.3.1.2. Contractor shall maintain plant and equipment in safe and efficient operating condition. Damages due to defective plant and equipment, and uses made thereof, shall be repaired by Contractor at no expense to the District.

1.3.2. No District tools or equipment shall be used by Contractor or its subcontractors for the performance of the Work.

1.4. BARRIERS AND ENCLOSURES

1.4.1. Contractor shall obtain District's written permission for locations and types of temporary barriers and enclosures, including fire-rated materials proposed for use, prior to their installation.

1.4.2. Contractor shall provide a six (6) foot high, chain link perimeter fence with posts driven into the ground and fabric screen as a temporary barrier around construction area. Contractor shall provide and maintain temporary enclosures to prevent public entry and to protect persons using other buildings and portions of the Site and/or Premises. Contractor shall remove temporary fence, barriers and enclosure upon Completion of the Work.

1.4.3. Contractor shall provide site access to existing facilities for persons using other buildings and portions of the Site, for the public, and for deliveries and other services and activities.

1.5. SECURITY

Contractor shall secure all construction equipment, machinery and vehicles, park and store only within fenced area, and render inoperable during non-work hours. Contractor is responsible for ensuring that no construction materials, tools, equipment, machinery or vehicles can be used for unauthorized entry or other damage or interference to activities and security of existing facilities adjacent to and in the vicinity of the Project Site.

1.6. TEMPORARY CONTROLS

1.6.1. **Noise Control**:

1.6.1.1. Contractor acknowledges that adjacent facilities may remain in operation during all or a portion of the Work, and Contractor shall take all reasonable precautions to minimize noise as required by applicable laws and the Contract Documents.

1.6.1.2. Notice of proposed noisy operations, including without limitation, operation of pneumatic demolition tools, concrete saws, and other equipment, shall be submitted to District a minimum of forty-eight (48) hours in advance of their performance.

1.6.2. **Noise and Vibration**:

1.6.2.1. Equipment and impact tools shall have intake and exhaust mufflers.

1.6.2.2. Contractor shall cooperate with District to minimize and/or cease the use of noisy and vibratory equipment if that equipment becomes objectionable by its longevity.

1.6.3. **Dust and Dirt**:

1.6.3.1. Contractor shall conduct demolition and construction operations to minimize the generation of dust and dirt, and prevent dust and dirt from interfering with the progress of the Work and from accumulating in the Work and adjacent areas including, without limitation, occupied facilities.

1.6.3.2. Contractor shall periodically water exterior demolition and construction areas to minimize the generation of dust and dirt.

1.6.3.3. Contractor shall ensure that all hauling equipment and trucks carrying loads of soil and debris shall have their loads sprayed with water or covered with tarpaulins, and as otherwise required by local and state ordinance.

1.6.3.4. Contractor shall prevent dust and dirt from accumulating on walks, roadways, parking areas, and planting, and from washing into sewer and storm drain lines.

1.6.4. **Surface and Subsurface Water:**

Contractor shall not permit surface and subsurface water, and other liquids, to accumulate in or about the vicinity of the Premises. Should accumulation develop, Contractor shall control the water or other liquid, and suitably dispose of it by means of temporary pumps, piping, drainage lines, troughs, ditches, dams, or other methods.

1.6.5. **Pollution**:

1.6.5.1. No burning of refuse, debris, or other materials shall be permitted on or in the vicinity of the Premises.

1.6.5.2. Contractor shall comply with applicable regulatory requirements and anti-pollution ordinances during the conduct of the Work including, without limitation, demolition, construction, and disposal operations.

1.6.6. **Lighting**

If portable lights are used after dark, all light must be located so as not to direct light into neighboring property.

1.7. JOB SIGN(S)

1.7.1. **General:**

1.7.1.1. Contractor shall provide and maintain and locate a Project identification sign with the design, text, and colors designated by District and/or the Architect.

1.7.1.2. Signs other than the specified Project sign and or signs required by law, for safety, or for egress, shall not be permitted, unless otherwise approved in advance by the District.

1.7.2. **Materials:**

1.7.2.1. Structure and Framing: Structurally sound, new or used wood or metal; wood shall be nominal 3/4-inch exterior grade plywood.

1.7.2.2. Sign Surface: Minimum 3/4-inch exterior grade plywood.

1.7.2.3. Rough Hardware: Galvanized.

1.7.2.4. Paint: Exterior quality, of type and colors selected by the District and/or the Architect.

1.7.3. **Fabrication:**

1.7.3.1. Contractor shall fabricate to provide smooth, even surface for painting.

1.7.3.2. Size: 4'-0" x 8'-0", unless otherwise indicated.

1.7.3.3. Contractor shall paint exposed surfaces of supports, framing, and surface material with exterior grade paint: one coat of primer and one coat of finish paint.

1.7.3.4. Text and Graphics: As indicated.

1.8. PUBLICITY RELEASES

Contractor shall not release any information, story, photograph, plan, or drawing relating to information about the Project to anyone, including press and other public communications medium, including, without limitation, on website(s).

END OF DOCUMENT

DOCUMENT 01 52 10

SITE STANDARDS

1. GENERAL

1.1. RELATED DOCUMENTS AND PROVISIONS:

Contractor shall review all Contract Documents for applicable provisions related to the provisions in this document, including without limitation:

1.1.1. General Conditions, including without limitation, Site Access, Conditions, and Regulations;

1.1.2. Special Conditions (if any);

1.1.3. Supplemental Conditions (if any);

1.1.4. Drug-Free Workplace Certification;

1.1.5. Tobacco-Free Environment Certification;

1.1.6. Criminal Background Investigation/Fingerprinting Certification; and

1.1.7. Temporary Facilities and Controls.

1.2. REQUIREMENTS OF THE DISTRICT

1.2.1. **Drug-Free Schools and Safety Requirements:**

1.2.1.1. All school sites and other District Facilities have been declared “Drug-Free Zones.” No drugs, alcohol, smoking or the use of tobacco products are allowed at any time in any buildings, Contractor-owned vehicles or vehicles owned by others while on District property. No students, staff, visitors, or contractors are to use drugs on these sites.

1.2.1.2. Contractor shall post: "Non-Smoking Area" in a highly visible location on Site. Contractor may designate a smoking area outside of District property within the public right-of-way, provided that this area remains quiet and unobtrusive to adjacent neighbors. This smoking area must be kept clean at all times.

1.2.1.3. Contractor shall ensure that no alcohol, firearms, weapons, or controlled substances enter or are used at the Site. Contractor shall immediately remove from the Site and terminate the employment of any employee(s) found in violation of this provision.

1.2.2. **Language**: Unacceptable and/or loud language will not be tolerated, "Cat calls" or other derogatory language toward students or public will not be allowed.

1.2.3. **Disturbing the Peace (Noise and Lighting):**

1.2.3.1. Contractor shall observe the noise ordinance of the Site at all times including, without limitation, all applicable local, city, and/or state laws, ordinances, and/or regulations regarding noise and allowable noise levels.

1.2.3.2. The use of radios, etc., shall be controlled to keep all sound at a level that cannot be heard beyond the immediate area of use. District reserves the right to prohibit the use of radios at the Site, except for handheld communication radios.

1.2.3.3. If portable lights are used after dark, the lights must be located so as not to direct light into neighboring properties.

1.2.4. **Traffic**:

1.2.4.1. Driving on the Premises shall be limited to periods when students and public are not present. If driving or deliveries must be made during the school hours, two (2) or more ground guides shall lead the vehicle across the area of travel. In no case shall driving take place across playgrounds or other pedestrian paths during recess, lunch, and/or class period changes. The speed limit on-the Premises shall be five (5) miles per hour (maximum) or less if conditions require.

1.2.4.2. All paths of travel for deliveries, including without limitation, material, equipment, and supply deliveries, shall be reviewed and approved by District in advance. Any damage will be repaired to the pre-damaged condition by the Contractor.

1.2.4.3. District shall designate a construction entry to the Site. If Contractor requests, District determines it is required, and to the extent possible, District shall designate a staging area so as not to interfere with the normal functioning of school facilities. Location of gates and fencing shall be approved in advance with District and at Contractor's expense.

1.2.4.4. Parking areas shall be reviewed and approved by District in advance. No parking is to occur under the drip line of trees or in areas that could otherwise be damaged.

1.2.4.5. All of the above shall be observed and complied with by the Contractor and all workers on the Site. Failure to follow these directives could result in individual(s) being suspended or removed from the work force at the discretion of the District. The same rules and regulations shall apply equally to delivery personnel, inspectors, consultants, and other visitors to the Site.

END OF DOCUMENT

SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and product substitutions.

B. Related Sections include the following:
   1. Division 1 Section "References" for applicable industry standards for products specified.
   2. Division 1 Section "Closeout Procedures" for submitting warranties for Contract closeout.
   3. Other Sections for specific requirements for warranties on products and installations specified to be warranted.

1.3 DEFINITIONS

A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
   1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
   2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.

B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor. Proposed products by manufacturers not listed in Manufacturers list.

C. Basis-of-Design: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation,

to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating "or equal" products of other named manufacturers.

D. District Standard: Where a specific manufacturer's product is named and accompanied by the words "District Standard," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics pre-selected by the District.
   1. District seeks to match products currently in use on other campuses; No substitution allowed.

1.4 SUBMITTALS

A. Product List: Submit a list, in tabular from, showing specified products. Include generic names of products required. Include manufacturer's name and proprietary product names for each product.
   1. Coordinate product list with Contractor's Construction Schedule and the Submittals Schedule.
   2. Form: Tabulate information for each product under the following column headings:
      a. Specification Section number and title.
      b. Generic name used in the Contract Documents.
      c. Proprietary name, model number, and similar designations.
      d. Manufacturer's name and address.
      e. Supplier's name and address.
      f. Installer's name and address.
      g. Projected delivery date or time span of delivery period.
      h. Identification of items that require early submittal approval for scheduled delivery date.
   3. Completed List: Submit 3 copies of completed product list within days specified in General Conditions. Include a written explanation for omissions of data and for variations from Contract requirements.
   4. Architect's Action: Architect will respond in writing to Contractor within 21 days of receipt of completed product list. Architect's response will include a list of unacceptable product selections and a brief explanation of reasons for this action. Architect's response, or lack of response, does not constitute a waiver of requirement to comply with the Contract Documents.

B. Substitution Requests: (REFER TO SECTION 2.2 FOR ADDITIONAL SUBSTITUTION REQUIREMENTS) Submit 4 copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use form provided at end of Section.
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
    a. Statement indicating why specified material or product cannot be provided.
    b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
    c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, environmental, and specific features and requirements indicated.
    d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
    e. Samples, where applicable or requested.
    f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
    g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
    h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
    i. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
    j. Cost information, including a proposal of change, if any, in the Contract Sum.
    k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
    l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Architect's Action: Architect will notify Contractor of acceptance or rejection of proposed substitution within 21 days of receipt of request.
    a. Form of Acceptance: Change Order.
    b. Use product specified if Architect cannot make a decision on use of a proposed substitution within time allocated.

C. All substitutions affecting the Structural, Access or Fire-Life Safety portions of the project shall be submitted to DSA for approval as a Construction Change Document

Submittal and Approval Process (Title 24, Part 1, California Code or Regulations, Section 4-338) requirements.

D. The cost for any additional design or engineering required to gain DSA approval of a substitution shall be borne solely by the contractor. Any delay impacts resulting from DSA review and approval of substitutions shall be borne solely by the contractor.

E. Named Product and Basis-of-Design Product Specification Submittal: Comply with requirements in Division 1 Section "Submittal Procedures." Show compliance with requirements.

F. District Standard Products Specification Submittal: Comply with requirements in Division 1 Section "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

A. Reference Standards: The 2022 Code of Regulations CCR, CFC, CMC, CPC, CEC Govern
1. Title 19 CCR, Public Safety, State Fire Marshall Regulations
2. Title 24 CCR, Part 1 - 2022 Building Standards Administrative Code
3. Title 24 CCR, Part 2 - 2022 California Building Code, VOL. 1&2 (CBC) (2021 IBC, as Amended by CA)
4. Title 24 CCR, Part 3 - 2022 California Electrical Code (CEC) (2020 NEC, as Amended by CA)
5. Title 24 CCR, Part 5 - 2022 California Plumbing Code (CPC) (2021 IAPMO UPC, as Amended by CA)
6. Title 24 CCR, Part 6 - 2022 California Energy Code
7. Title 24 CCR, Part 9 - 2022 California Fire Code (CFC) (2021 IFC, as Amended by CA
8. Title 24 CCR, Part 11 - 2022 California Green Building Standards Code (Calgreen Code)
9. Title 24 CCR, Part 12 - 2022 California Reference Standards (Partial List)
10. NFPA 101- Life Safety Code. 2021 Edition
11. 2022 ADA Standards for Accessible Design
12. Americans with Disabilities Act (ADA), Title II or Title III.

B. Changes to the approved drawings and specifications shall be made by an addendum or a Construction Change Document approved by the Division of the State Architect, as required by Section 4-338, Part 1, Title 24, CCR.

C. Compatibility of Options: 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.
1. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.

B. Delivery and Handling:
   1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
   2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
   3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
   4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.

C. Storage:
   1. Store products to allow for inspection and measurement of quantity or counting of units.
   2. Store materials in a manner that will not endanger Project structure.
   3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
   4. Store cementitious products and materials on elevated platforms.
   5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
   6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
   7. Protect stored products from damage and liquids from freezing.
   8. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.7 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
   1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.

2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
   1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
   2. Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
   3. Refer to other sections for specific content requirements and particular requirements for submitting special warranties.

C. Warranty Period: Warranty period specified in each sections are minimum requirements. Do not modify manufacturer’s standard warranty period if the manufacturer’s warranty has longer warranty period.

D. Submittal Time: Comply with requirements in Division 1 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
   1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
   2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
   3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
   4. Where products are accompanied by the term "as selected," Architect will make selection.
   5. Where products are accompanied by the term "match sample," sample to be matched is Architect's.
   6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.

B. Product Selection Procedures:
   1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.

2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
5. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or an equal product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with "or equal".
6. Or Equal: Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or approved," comply with provisions in Part 2 "Product Substitutions" Article to obtain approval by Architect for use of an unnamed product.
7. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
    a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product.
8. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.
    a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that does not include custom or premium items.
    b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that includes standard, custom, and premium items.

2.2 PRODUCT SUBSTITUTIONS

A. Timing: Architect will consider requests for substitution if received within 35 days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect.

B. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
   1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
   2. Requested substitution does not require extensive revisions to the Contract Documents.
   3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
   4. Substitution request is fully documented and properly submitted.
   5. Requested substitution will not adversely affect Contractor's Construction Schedule.
   6. Requested substitution has received necessary approvals of authorities having jurisdiction and has paid any fees.
   7. Requested substitution is compatible with other portions of the Work.
   8. Requested substitution has been coordinated with other portions of the Work.
   9. Requested substitution provides specified warranty.
   10. 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.
   11. Furnish samples upon requested by Architect.
   12. Attached Request for Substitution Form shall used for substitution requests.

C. Substitutions for products or systems involving structural, fire/life safety and access compliance will be considered a Construction Change Document or Addendum, and will require DSA approval. This will add time required to review those substitutions requiring DSA approval. Contractor is solely responsible for all documentation and time required to obtain DSA approval.
   1. The use of a product other than specified or noted on the Drawings will require the Contractor to get Engineer, Architect and DSA approval.
   2. The Contractor shall be responsible to provide any information, calculations or drawings to show compliance with the DSA approved drawings and provide all documentation to the Architect and/or Engineer of record.
   3. Any changes or “substitutions” that impact or relate to DSA requirements for structural, ADA or fire and life safety MUST be approved by DSA prior to proceeding with the work.
   4. The Contractor shall also be responsible for all costs to the DSA, Architect or Architect consultants for review, co-ordination, and approval by the DSA.

a. All costs for submittal to DSA and Architect/ design team expenses shall be back charged to the Contractor.

PART 3 - EXECUTION

3.1 FORMS

A. Electronic versions of attached forms will be provided upon request.
   1. Product List Form.
   2. Similar Installation List Form.
   3. Substitution Request Form.

END OF SECTION 01 60 00

DOCUMENT 01 66 10

DELIVERY, STORAGE AND HANDLING

1. GENERAL

1.1. RELATED DOCUMENTS AND PROVISIONS

Contractor shall review all Contract Documents for applicable provisions related to the provisions in this document, including without limitation:

1.1.1. General Conditions, including, without limitation, Site Access, Conditions and Requirements; and

1.1.2. Special Conditions.

1.2. PRODUCTS

1.2.1. Products are as defined in the General Conditions.

1.2.2. Contractor shall not use and/or reuse materials and/or equipment removed from existing Premises, except as specifically permitted by the Contract Documents.

1.2.3. Contractor shall provide interchangeable components of the same manufacturer, for similar components.

1.3. TRANSPORTATION AND HANDLING

1.3.1. Contractor shall transport and handle Products in accordance with manufacturer's instructions.

1.3.2. Contractor shall promptly inspect shipments to confirm that Products comply with Contract requirements, are of correct quantity, and are undamaged.

1.3.3. Contractor shall provide equipment and personnel to properly handle Products to prevent soiling, disfigurement, or damage.

1.4. STORAGE AND PROTECTION

1.4.1. Contractor shall store and protect Products in accordance with manufacturer's instructions, with seals and labels intact and legible. Contractor shall store sensitive Products in weather-tight, climate controlled enclosures.

1.4.2. Contractor shall place fabricated Products that are stored outside, on above-ground sloped supports.

1.4.3. Contractor shall provide off-site storage and protection for Products when Site does not permit on-site storage or protection.

1.4.4. Contractor shall cover Products subject to deterioration with impervious sheet covering and provide ventilation to avoid condensation.

1.4.5. Contractor shall store loose granular materials on solid flat surfaces in a well-drained area and prevent mixing with foreign matter.

1.4.6. Contractor shall provide equipment and personnel to store Products by methods to prevent soiling, disfigurement, or damage.

1.4.7. Contractor shall arrange storage of Products to permit access for inspection and periodically inspect to assure Products are undamaged and are maintained under specified conditions.

END OF DOCUMENT

DOCUMENT 01 73 00

EXECUTION

1. GENERAL

1.1. RELATED DOCUMENTS AND PROVISIONS

Contractor shall review all Contract Documents for applicable provisions related to the provisions in this document, including without limitation:

1.1.1. General Conditions;

1.1.2. Special Conditions (if any);

1.1.3. Supplemental Conditions (if any);

1.1.4. Coordination and Project Meetings;

1.1.5. Submittals;

1.1.6. Materials and Equipment;

1.1.7. Cutting and Patching;

1.1.8. Contract Closeout and Final Cleaning; and

1.1.9. General Commissioning Requirements.

1.2. SUMMARY

1.2.1. This Document includes general procedural requirements governing execution of the Work including, but not limited to, the following:

1.2.1.1. Construction layout;

1.2.1.2. Field engineering and surveying;

1.2.1.3. General installation of products;

1.2.1.4. Owner furnished, Contractor installed items;

1.2.1.5. Coordination of District-installed products;

1.2.1.6. Progress cleaning;

1.2.1.7. Staring and adjusting;

1.2.1.8. Protection of installed construction; and

1.2.1.9. Correction of the Work.

1.3. SUBMITTALS

1.3.1. Qualification Data: For land surveyor or professional engineer.

1.3.2. Certificates: Submit certificate signed by land surveyor or professional engineer certifying that location and elevation of improvements comply with requirements.

1.3.3. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept the materials as classified, for hazardous waste disposal.

1.3.4. Certified Surveys: Submit electronic files and three (3) paper copies signed by land surveyor or professional engineer.

1.3.5. Final Property Survey: Submit electronic files and three (3) paper copies showing the Work performed and record survey data.

2. EXECUTION

2.1. EXAMINATION

2.1.1. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning Site Work, investigate and verify the existence and location of underground utilities and other construction affecting the Work.

2.1.1.1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.

2.1.1.2. Furnish location data for Work related to Project that must be performed by public utilities serving the Project Site.

2.2. PREPARATION

2.2.1. Existing Utility Information: Furnish information to local utility 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 authorities having jurisdiction.

2.2.2. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

2.2.3. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

2.2.4. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to

District per requirements of Document "Requests for Information." Include a detailed description of problem encountered, together with recommendations for any necessary changes to the Contract Documents.

2.3. CONSTRUCTION LAYOUT

2.3.1. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify District and its consultant promptly.

2.3.2. General: Engage a land surveyor or professional engineer to lay out the Work using accepted surveying practices.

2.3.2.1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.

2.3.2.2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.

2.3.2.3. Inform installers of lines and levels to which they must comply.

2.3.2.4. Check the location, level and plumb, of every major element as the Work progresses.

2.3.2.5. Notify District and its consultant when deviations from required lines and levels exceed allowable tolerances.

2.3.2.6. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.

2.3.3. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.

2.3.4. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

2.3.5. Record Log: Maintain a log of layout control Work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by District and its consultant.

2.4. FIELD ENGINEERING

2.4.1. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.

2.4.1.1. Do not change or relocate existing benchmarks or control points without prior written approval of District and its consultant. Report lost or destroyed

permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to District and its consultant before proceeding.

2.4.1.2. Require surveyor to replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

2.4.2. Benchmarks: Establish and maintain a minimum of two (2) permanent benchmarks on Project Site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.

2.4.2.1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.

2.4.2.2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.

2.4.2.3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

2.4.3. Records: Contractor shall maintain a complete, accurate log of all control and survey Work as it progresses. On request of District or Architect, Contractor shall submit documentation to verify accuracy of field engineering Work at no additional cost to the District.

2.4.4. Certified Survey: On completion of foundation walls, major site improvements, and other Work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.

2.4.5. Final Property Survey: Prepare and submit a final property survey showing significant features (real property) for Project. Include on the survey a certification, signed by land surveyor or professional engineer, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey and are in conformance with Contract Documents.

2.4.5.1. Show boundary lines, monuments, streets, site improvements and utilities, existing improvements and significant vegetation, adjoining properties, acreage, grade contours, and the distance and bearing from a Site corner to a legal point.

2.4.6. Compliance with Laws: Contractor is responsible for meeting all applicable codes, OSHA, safety, and shoring requirements.

2.4.7. Nonconforming Work: Contractor is responsible for any re-surveying required by correction of nonconforming Work.

2.5. INSTALLATION

2.5.1. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

2.5.1.1. Make vertical Work plumb and make horizontal Work level.

2.5.1.2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.

2.5.1.3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.

2.5.1.4. Maintain minimum headroom clearance of 7 feet in spaces without a suspended ceiling.

2.5.2. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

2.5.3. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Completion.

2.5.4. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

2.5.5. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels where possible.

2.5.6. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

2.5.7. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.

2.5.7.1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by District.

2.5.7.2. Allow for building movement, including thermal expansion and contraction.

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

2.5.8. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

2.5.9. Hazardous Materials: Use products, cleaners, and installation materials that are not classed as hazardous per the MSDS sheets for the products where possible. If hazardous materials are necessary, inform District where and when they will be used no less than 48 hours before use. Take all recommended precautions of the materials' manufacturers to ensure safe use and clean-up.

2.6. DISTRICT-INSTALLED PRODUCTS

2.6.1. Site Access: Provide access to Project Site for District's construction forces.

2.6.2. Coordination: Coordinate construction and operations of the Work with work performed by District's construction forces.

2.6.2.1. Construction Schedule: Inform District of Contractor's preferred schedule for District's portion of the Work. Adjust Construction Schedule based on a mutually agreeable timetable. Notify District if changes to schedule are required due to differences in actual construction progress.

2.6.2.2. Preinstallation Conferences: Include District's construction forces at preinstallation conferences covering portions of the Work that are to receive District's work. Attend preinstallation conferences conducted by District's construction forces if portions of the Work depend on District's construction.

2.7. PROGRESS CLEANING

2.7.1. General: Clean Project Site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.

2.7.1.1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.

2.7.1.2. Do not hold materials more than seven (7) days during normal weather or three (3) days if the temperature is expected to rise above 80 degrees F.

2.7.1.3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations. Remove hazardous and unsanitary waste materials daily.

2.7.2. Site: Maintain Project Site free of waste materials and debris.

2.7.3. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

2.7.3.1. Remove liquid spills promptly.

2.7.3.2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

2.7.4. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

2.7.5. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

2.7.6. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Completion.

2.7.7. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

2.7.8. 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 at Completion.

2.7.9. 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.

2.7.10. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

2.8. STARTING AND ADJUSTING

2.8.1. Start equipment and operating components to confirm proper operation. Replace or repair malfunctioning units and retest.

2.8.2. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.

2.8.3. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

2.8.4. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Document "Quality Requirements."

2.9. PROTECTION OF INSTALLED CONSTRUCTION

2.9.1. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Completion.

2.9.2. Comply with manufacturer's written instruction for temperature and relative humidity unless otherwise addressed in the construction planning, sequences, and instructions.

2.10. CORRECTION OF THE WORK

2.10.1. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Document "Cutting and Patching."

2.10.1.1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

2.10.2. Restore permanent facilities used during construction to their specified condition.

2.10.3. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

2.10.4. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

2.10.5. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF DOCUMENT

SECTION 01 73 29 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes procedural requirements for cutting and patching.

B. Related Sections include the following:
   1. Divisions 2 through 33 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1.3 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.

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

1.4 SUBMITTALS

A. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
   1. Extent: Describe cutting and patching, show how they will be performed.
   2. Products: List products to be used and firms or entities that will perform the Work.
   3. Dates: Indicate when cutting and patching will be performed.
   4. Utility Services and Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.
   5. Architect's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.5 QUALITY ASSURANCE

A. Cutting, boring, saw cutting or drilling through the new or existing structural elements to be done only when so detailed in the drawings or accepted by the Architect and Engineer with the approval of DSA Representative.

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

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

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

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

1.6 WARRANTY

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

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
   1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
   1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
   2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut where required for safety and to prevent unnecessary damage to existing components.

B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.

3.3 PERFORMANCE

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
   1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
   1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Excavating and Backfilling: Comply with requirements in applicable spec sections where required by cutting and patching operations.
5. Plumbing and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
6. Proceed with patching after construction operations requiring cutting are complete.

C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
   1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
   2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
      a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
      b. Restore damaged pipe covering to its original condition.
   3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
      a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
   4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
   5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 01 73 29

SECTION 01 74 19 - CONSTRUCTION WASTE MANAGEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for the following:

1. Disposing of nonhazardous construction waste.

B. Related Sections include the following:

1. Division 1 Section "Temporary Facilities and Controls" for environmental-protection measures during construction.

1.3 DEFINITIONS

A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.

C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.4 PERFORMANCE REQUIREMENTS

A. General: Develop waste management plan that results in end-of-Project rates for salvage/recycling of 75 percent by weight of total waste generated by the Work.

1.5 SUBMITTALS

A. Waste Management Plan: Submit 3 copies of plan within 30 days of date established for the Notice to Proceed.

B. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit three copies of report. Include the following information:
   1. Material category.
   2. Generation point of waste.
   3. Total quantity of waste in tons.
   4. Quantity of waste salvaged, both estimated and actual in tons.
   5. Quantity of waste recycled, both estimated and actual in tons.
   6. Total quantity of waste recovered (salvaged plus recycled) in tons.
   7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.

C. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

D. Qualification Data: For Waste Management Coordinator.

E. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.6 QUALITY ASSURANCE

A. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.

B. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

C. Waste Management Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to waste management including, but not limited to, the following:
   1. Review and discuss waste management plan including responsibilities of Waste Management Coordinator.
   2. Review requirements for documenting quantities of each type of waste and its disposition.

3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
5. Review waste management requirements for each trade.

1.7 WASTE MANAGEMENT PLAN

A. General: Develop plan consisting of waste identification, waste reduction work plan, and cost/revenue analysis. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.

B. Waste Identification: Indicate anticipated types and quantities of construction waste generated by the Work. Include estimated quantities and assumptions for estimates.

C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.
1. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
2. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
3. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project site where materials separation will be located.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

A. General: Implement waste management plan as approved by Architect. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
1. Comply with Division 1 Section "Temporary Facilities and Controls" for operation, termination, and removal requirements.

B. Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan. Coordinator shall be present at Project site full time for duration of Project.

C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.
   1. Distribute waste management plan to everyone concerned within three days of submittal return.
   2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
   1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
   2. Comply with Division 1 Section "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 RECYCLING CONSTRUCTION WASTE, GENERAL

A. General: Recycle paper and beverage containers used by on-site workers.

B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall be shared equally by Owner and Contractor.

C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical.
   1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
      a. Inspect containers and bins for contamination and remove contaminated materials if found.
   2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
   3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
   4. Store components off the ground and protect from the weather.
   5. Remove recyclable waste off Owner's property and transport to recycling receiver or processor.

3.3 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
   1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
   2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn waste materials.

C. Disposal: Transport waste materials off Owner's property and legally dispose of them.

END OF SECTION 01 74 19

SECTION 01 77 00 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
   1. IOR's Inspection procedures.
   2. Warranties.
   3. Extra Materials.
   4. Final cleaning.
   5. DSA project closeout and Final Certification of Construction.
   6. Title 24 Certificate of Acceptance requirements.

1.3 SUBMITTALS

A. Submit a copy of Title 24 Certificate of Acceptance forms submitted to enforcement agency.

1.4 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting IOR's inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
   1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
   2. Advise Owner of pending insurance changeover requirements.
   3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
   4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.

5. Prepare and submit Project Record Documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
8. Complete startup testing of systems.
9. Submit test/adjust/balance records.
10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
11. Advise Owner of changeover in heat and other utilities.
12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
13. Complete final cleaning requirements, including touchup painting.
14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. IOR's Inspection: Submit a written request for IOR's inspection for Substantial Completion. On receipt of request, Architect will either proceed with IOR's inspection process or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after IOR's inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
   1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
   2. Results of completed inspection will form the basis of requirements for Final Completion.

1.5 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final IOR's inspection for determining date of Final Completion, complete the following:
   1. Submit a final Application for Payment according to Division 1 Section "Payment Procedures."
   2. Submit certified copy of Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
   3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
   4. Submit pest-control final inspection report and warranty.

5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.

B. IOR's Inspection: Submit a written request for final IOR's inspection process for acceptance. On receipt of request, Architect will either proceed with IOR's inspection process or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after IOR's inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
   1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.6 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction. Use form attached.
   1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
   2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
   3. Include the following information at the top of each page:
      a. Project name.
      b. Date.
      c. Name of Architect.
      d. Name of Contractor.
      e. Page number.

B. NOTE: The punch list does not relieve the Contractor(s) of and of the Contract requirements noted in the specifications and construction documents

1.7 WARRANTIES

A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date specified in General Conditions.

B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
   1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.

2. Include Table of Contents.
3. Identify content with specification section number and title.
4. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
5. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

1.8 EXTRA MATERIALS

A. Deliver to Owner's facility manager extra materials specified in each section.

B. Organize submitted materials in orderly sequence based on the table of contents of the Project Manual.
   1. Itemize each material and quantity in 8-1/2 by 11-inch paper.

C. Label each item for easy identification.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
   1. Complete the following cleaning operations before requesting IOR's inspection for certification of Substantial Completion for entire Project or for a portion of Project:

a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
d. Remove tools, construction equipment, machinery, and surplus material from Project site.
e. Remove snow and ice to provide safe access to building.
f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
h. Sweep concrete floors broom clean in unoccupied spaces.
i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
k. Remove labels that are not permanent.
l. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
    1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
m. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
n. Replace parts subject to unusual operating conditions.
o. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
p. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
q. Clean ducts, blowers, and coils if units were operated without filters during construction.
r. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by

hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

s. Leave Project clean and ready for occupancy.

3.2 FORMS

A. Electronic versions of attached forms will be provided upon request.
   1. Punch-List Form.

END OF SECTION 01 77 00

DOCUMENT 01 78 23

OPERATION AND MAINTENANCE DATA

1. GENERAL

1.1. RELATED DOCUMENTS AND PROVISIONS

Contractor shall review all Contract Documents for applicable provisions related to the provisions in this document, including without limitation:

1.1.1. General Conditions, including, without limitation, Completion of the Work;

1.1.2. Special Conditions (if any);

1.1.3. Supplemental Conditions (if any);

1.1.4. Submittals;

1.1.5. Contract Closeout and Final Cleaning;

1.1.6. Warranties;

1.1.7. Record Documents;

1.1.8. General Commissioning Requirements.

1.2. QUALITY ASSURANCE

1.2.1. Contractor shall prepare instructions and data by personnel experienced in maintenance and operation of described products.

1.3. FORMAT

1.3.1. Contractor shall prepare data in the form of an instructional manual entitled “OPERATIONS AND MAINTENANCE MANUAL & INSTRUCTIONS” (“Manual”).

1.3.2. Binders & Digital Copies: Contractor shall use commercial quality, 8-1/2 by 11 inch, three-side rings, with durable plastic covers; two inch maximum ring size. When multiple binders are used, Contractor shall correlate data into related consistent groupings. In addition to providing a hard copy, the contractor is also required to furnish the District with two (2) copies of the “Operations and Maintenance Manual and Instructions” in digital format on flash drives.

1.3.3. Cover: Contractor shall identify each binder with typed or printed title "OPERATION AND MAINTENANCE MANUAL & INSTRUCTIONS"; and shall list title of Project and identify subject matter of contents.

1.3.4. Contractor shall arrange content by systems process flow under section numbers and sequence of the Table of Contents of the Contract Documents.

1.3.5. Contractor shall provide tabbed fly leaf for each separate Product and system, with typed description of Product and major component parts of equipment.

1.3.6. Text: The content shall include Manufacturer's printed data, or typewritten data on 24 pound paper.

1.3.7. Drawings: Contractor shall provide with reinforced punched binder tab and shall bind in with text; folding larger drawings to size of text pages.

1.4. CONTENTS, EACH VOLUME

1.4.1. Table of Contents: Contractor shall provide title of Project; names, addresses, and telephone numbers of the Architect, any engineers, subconsultants, Subcontractor(s), and Contractor with name of responsible parties; and schedule of Products and systems, indexed to content of the volume.

1.4.2. For Each Product or System: Contractor shall list names, addresses, and telephone numbers of Subcontractor(s) and suppliers, including local source of supplies and replacement parts.

1.4.3. Product Data: Contractor shall mark each sheet to clearly identify specific Products and component parts, and data applicable to installation. Delete inapplicable information.

1.4.4. Drawings: Contractor shall supplement Product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Contractor shall not use Project Record Documents as maintenance drawings.

1.4.5. Text: The Contractor shall include any and all information as required to supplement Product data. Contractor shall provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

1.5. MANUAL FOR MATERIALS AND FINISHES

1.5.1. Building Products, Applied Materials, and Finishes: Contractor shall include Product data, with catalog number, size, composition, and color and texture designations. Contractor shall provide information for re-ordering custom manufactured Products.

1.5.2. Instructions for Care and Maintenance: Contractor shall include Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

1.5.3. Moisture Protection and Weather Exposed Products: Contractor shall include Product data listing applicable reference standards, chemical composition, and details of installation. Contractor shall provide recommendations for inspections, maintenance, and repair.

1.5.4. Additional Requirements: Contractor shall include all additional requirements as specified in the Specifications.

1.5.5. Contractor shall provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.6. MANUAL FOR EQUIPMENT AND SYSTEMS

1.6.1. Each Item of Equipment and Each System: Contractor shall include description of unit or system, and component parts and identify function, normal operating characteristics, and limiting conditions. Contractor shall include performance curves, with engineering data and tests, and complete nomenclature, and commercial number of replaceable parts.

1.6.2. Panelboard Circuit Directories: Contractor shall provide electrical service characteristics, controls, and communications.

1.6.3. Contractor shall include color coded wiring diagrams as installed.

1.6.4. Operating Procedures: Contractor shall include start-up, break-in, and routine normal operating instructions and sequences. Contractor shall include regulation, control, stopping, shut-down, and emergency instructions. Contractor shall include summer, winter, and any special operating instructions.

1.6.5. Maintenance Requirements: Contractor shall include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

1.6.6. Contractor shall provide servicing and lubrication schedule, and list of lubricants required.

1.6.7. Contractor shall include manufacturer's printed operation and maintenance instructions.

1.6.8. Contractor shall include sequence of operation by controls manufacturer.

1.6.9. Contractor shall provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

1.6.10. Contractor shall provide control diagrams by controls manufacturer as installed.

1.6.11. Contractor shall provide Contractor's coordination drawings, with color coded piping diagrams as installed.

1.6.12. Contractor shall provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

1.6.13. Contractor shall provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

1.6.14. Additional Requirements: Contractor shall include all additional requirements as specified in Specification(s).

1.6.15. Contractor shall provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.7. SUBMITTAL

1.7.1. Concurrent with the Schedule of Submittals as indicated in the General Conditions, Contractor shall submit to the District for review two (2) copies of a preliminary draft of proposed formats and outlines of the contents of the Manual.

1.7.2. For equipment, or component parts of equipment put into service during construction and to be operated by District, Contractor shall submit draft content for that portion of the Manual within ten (10) days after acceptance of that equipment or component.

1.7.3. On or before the Contractor submits its final application for payment, Contractor shall submit two (2) copies of a complete Manual in final form The District will provide comments to Contractor and Contractor must revise the content of the Manual as required by District prior to District's approval of Contractor's final Application for Payment.

1.7.4. Contractor must submit two (2) copies of revised Manual in final form within ten (10) days after receiving District's comments. Failure to do so will be a basis for the District withholding funds sufficient to protect itself for Contractor's failure to provide a final Manual to the District.

END OF DOCUMENT

DOCUMENT 01 78 36

WARRANTIES

1. GENERAL

1.1. RELATED DOCUMENTS AND PROVISIONS

Contractor shall review all Contract Documents for applicable provisions related to the provisions in this document, including without limitation:

1.1.1. General Conditions, including, without limitation, Warranty/Guarantee/Indemnity;

1.1.2. Special Conditions (if any);

1.1.3. Supplemental Conditions (if any);

1.1.4. Submittals;

1.1.5. Contract Closeout and Final Cleaning;

1.1.6. Operation and Maintenance Data;

1.1.7. Record Documents;

1.1.8. General Commissioning Requirements.

1.2. FORMAT

1.2.1. Binders & Digital Copies: Contractor shall use commercial quality, 8-1/2 by 11 inch, three-side rings, with durable plastic covers; two inch maximum ring size. In addition to providing a hard copy, the contractor is also required to furnish the District with copies of the “Warranties” in digital format on a flash drive.

1.2.2. Cover: Contractor shall identify each binder with typed or printed title "WARRANTIES” and shall list the title of Project.

1.2.3. Table of Contents: Contractor shall provide the title of Project; name, address, and telephone number of Contractor and equipment supplier, and name of responsible principal. Contractor shall identify each item with the number and title of the specific Specification, document, provision, or section in which the name of the Product or Work item is specified.

1.2.4. Contractor shall separate each Warranty with index tab sheets keyed to the Table of Contents listing, providing full information and using separate typed sheets as necessary. Contractor shall list each applicable and/or responsible Subcontractor(s), supplier(s), and/or manufacturer(s), with name, address, and telephone number of each responsible principal(s).

1.2.5. In addition to all Warranty documentation and information required herein, Contractor shall provide its Guarantee as required by the Contract Documents.

1.3. PREPARATION

1.3.1. Contractor shall obtain Warranties, executed in duplicate by each applicable and/or responsible Subcontractor(s), supplier(s), and manufacturer(s), within ten (10) days after completion of the applicable item or Work. Except for items put into use with District's permission, Contractor shall leave date of beginning of time of Warranty until the date of Completion is determined.

1.3.2. Contractor shall verify that Warranties.

1.3.3. are in proper form, contain full information, and are notarized, when required.

1.3.4. Contractor shall co-execute submittals when required.

1.3.5. Contractor shall retain warranties until time specified for submittal.

1.4. TIME OF SUBMITTALS

1.4.1. Schedule of Warranties. Contractor shall provide District with a Schedule of Warranties at least fourteen (14) days prior to submitting its other required submittals indicated herein. This will provide District the opportunity to review the anticipated Warranties and make any comments, suggestions or revisions the District may require.

1.4.2. For equipment or component parts of equipment put into service during construction with District's permission, Contractor shall submit a draft Warranty for that equipment or component within ten (10) days after acceptance of that equipment or component.

1.4.3. On or before the Contractor submits its final application for payment, Contractor shall submit all Warranties and related documents in final form. The District shall indicate any Warranty-related Work that is being performed and incomplete at the time Contractor submits its final application for payment. District will provide comments to Contractor and Contractor must revise the content of the Warranties as required by District prior to District's approval of Contractor’s final Application for Payment.

1.4.4. For items of Work that are not completed until after the date of Completion, Contractor shall provide an updated Warranty for those item(s) of Work within ten (10) days after acceptance, listing the date of acceptance as start of the Warranty period.

END OF DOCUMENT

SECTION 01 78 39 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
   1. Record Drawings.
   2. Record Specifications.
   3. Record Product Data.

B. Related Sections include the following:
   1. Division 1 Section "Closeout Procedures" for general closeout procedures.
   2. Division 1 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
   3. Other Sections for specific requirements for Project Record Documents of the Work in those Sections.

1.3 SUBMITTALS

A. Record Drawings: Comply with the following:
   1. Number of Copies: Submit 1 set of marked-up Record Prints.

B. Record Specifications: Submit 1 copy of Project's Specifications, including addenda and contract modifications.

C. Record Product Data: Submit 1 copy of each Product Data submittal.
   1. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in manual instead of submittal as Record Product Data.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.
   1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
      a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
      b. Accurately record information in an understandable drawing technique.
      c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
   2. Content: Types of items requiring marking include, but are not limited to, the following:
      a. Dimensional changes to Drawings.
      b. Revisions to details shown on Drawings.
      c. Depths of foundations below first floor.
      d. Locations and depths of underground utilities.
      e. Revisions to routing of piping and conduits.
      f. Revisions to electrical circuitry.
      g. Actual equipment locations.
      h. Duct size and routing.
      i. Locations of concealed internal utilities.
      j. Changes made by Change Order Documents.
      k. Changes made following Architect's written orders.
      l. Details not on the original Contract Drawings.
      m. Field records for variable and concealed conditions.
      n. Record information on the Work that is shown only schematically.
   3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
   4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
   5. Mark important additional information that was either shown schematically or omitted from original Drawings.
   6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
   1. Record Prints: Organize Record Prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
   2. Identification: As follows:
      a. Project name.
      b. Date.
      c. Designation "PROJECT RECORD DRAWINGS."
      d. Name of Architect.
      e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
   1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
   2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
   3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
   4. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
   5. Note related Change Orders, Record Product Data, and Record Drawings where applicable.

2.3 RECORD PRODUCT DATA

A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
   1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
   2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
   3. Note related Change Orders, Record Specifications, and Record Drawings where applicable.
   4. Assemble in single binder with table of contents.

2.4 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.

B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

3.2 FORMS

A. Electronic versions of attached forms will be provided upon request.
   1. Record Product Data Form.

END OF SECTION 01 78 39

SECTION 01 79 00

DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
   1. Demonstration of operation of systems, subsystems, and equipment.
   2. Training in operation and maintenance of systems, subsystems, and equipment.

1.3 SUBMITTALS

A. Instruction Program: Submit 2 copies of outline of instructional program for demonstration and training, including a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
   1. At completion of training, submit 1 complete training manual(s) for Owner's use.

B. Qualification Data: For instructor.

C. Attendance Record: For each training module, submit list of participants and length of instruction time.

D. Evaluations: For each participant and for each training module, submit results and documentation of performance-based test.

1.4 QUALITY ASSURANCE

A. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Division 1 Section "Quality Requirements," experienced in operation and maintenance procedures and training.

1.5 COORDINATION

A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations.

B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.

C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Architect.

PART 2 - PRODUCTS

2.1 INSTRUCTION PROGRAM

A. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections.

B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master.

PART 3 - EXECUTION

3.1 PREPARATION

A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a combined training manual.

B. Set up instructional equipment at instruction location.

3.2 INSTRUCTION

A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.

B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

C. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
   1. Schedule training with Owner, through Architect, with at least 7 days' advance notice.

D. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of a written performance-based test.

E. Cleanup: Collect used and leftover educational materials and give to Owner. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

END OF SECTION 01 79 00

SECTION 01 81 19 - CONSTRUCTION INDOOR AIR QUALITY

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:
   1. Temporary construction ventilation, dust protection, preconditioning of materials, protection of materials, sequencing, duct protection, and duct cleaning to insure good indoor air quality after occupancy to be performed by the CONTRACTOR.

B. Related Sections:

1.2 REFERENCES

A. SMACNA - IAQ Guidelines for Occupied Buildings Under Construction, 1995, Chapter 3.

B. ASHRAE Standard 52.2-1999 - Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size (ANSI approved)

1.3 CLASSIFICATION OF RELEVANT MATERIALS

A. VOC-Emitting Materials
   1. Section 09 21 16, Gypsum Board Assemblies
      a. Adhesives
      b. Sealants
   2. Section 09 91 00, Painting and Coatings
      a. Painting
      b. Coatings

1.4 SUBMITTALS

A. Submit eighteen (18) photographs documenting compliance with this Section. Provide six (6) photographs each at three (3) different phases of construction.

B. Contractor shall develop and submit to the Architect for review the Construction Indoor Air Quality (IAQ) Plan as required in this Section. A template form is provided Appendix A of this Specification. The plan shall be submitted along with the first submittal for any of the products listed above.

1.5 SUBSTITUTIONS

A. Construction Indoor Air Quality (IAQ) requirements described below are based upon practices described in SMACNA IAQ Guidelines for Occupied Buildings Under Construction, 1995. Any modifications to or substitutions of requirements described in this Section must comply with the abovementioned SMACNA guideline.

PART 2 - PRODUCTS

2.1 NOT USED

PART 3 - EXECUTION

3.1 QUALITY ASSURANCE

A. Inspection: Contractor shall conduct inspections to confirm that construction IAQ measures proposed in the Construction IAQ Plan are being followed, and be prepared to report compliance with the Plan at progress meetings.

3.2 PROJECT CONTITIONS

A. Air Filtration:
   1. Systems designed with particle filters shall not be operated without filters in place. Temporary construction filters shall have a minimum MERV rating of 8.
   2. Replace all air filtration media immediately prior to occupancy. Post-construction air filters shall have a minimum MERV rating of 13.

B. Construction Ventilation: Following building enclosure, maintain continuous temporary ventilation of areas during installation of voe-Emitting Materials identified in paragraph 1.04 of this Section. Construction Ventilation shall be provided for post-occupancy touch-up work involving VOC-Emitting materials. It is not required during Building Flush-Out.
   1. Ventilation shall be supplied via open windows and doors, temporary ducts, and temporary fans, sufficient to provide no less than three (3) air changes per hour.
   2. When continuous ventilation is not practical via temporary fans and exhaust to outside, then ventilation shall be supplied via the building's HVAC system and shall comply with the following requirements:
      a. Provide temporary air filters at return air grilles.
      b. Provide 100% outside air. Relative humidity not to exceed 60%.
      c. Provide a minimum of three {3) air changes per hour.

3. Maintain continuous ventilation for a minimum period of 72 hours after installation of VOC-Emitting Materials, unless otherwise indicated elsewhere in these Specifications.
4. Ventilate areas directly to outside; ventilation to other enclosed areas is not acceptable.

C. Preconditioning: Prior to installation, allow contractor-furnished contractor-installed VOC-Emitting Furnishings and Equipment as identified in paragraph 1.04 of this Section to off-gas in dry, well-ventilated space for 14 calendar days to allow for reasonable dissipation of odors and emissions
1. Remove containers and packaging to maximize off-gassing of VOCs.
2. Precondition products in ventilated warehouse or other ventilated building. Preconditioning at the project site is acceptable, provided that Temporary Construction Ventilation and Sequencing measures are taken as described elsewhere in this Specification.
3. Products requiring preconditioning include, at minimum, contractor-furnished and contractor-installed VOC-Emitting Furnishings and Equipment that contain vinyl or other flexible plastics, resins, adhesives, foam rubber, and fiberboards with urea-formaldehyde binders. Products bearing Greenguard certification (www.greenguard.org) shall be excluded from the preconditioning requirement.

3.3 SEQUENCING

A. On-Site Application: Where VOC-Emitting Materials as identified in paragraph 1.03 of this Specification are applied on-site, apply prior to installation of Porous and Fibrous Materials as identified in paragraph 1.04 of this Specification. Maintain continuous ventilation for a period of 72 hours before installation of porous and fibrous materials.
1. Where this sequencing requirement is not possible, protect porous materials with polyethylene vapor retarders. Tape all polyethylene edges to insure a complete seal. Maintain continuous ventilation per temporary construction ventilation requirements described above for a period of 72 hours before removing polyethylene.

B. Completion: Complete interior finish material installation prior to Building Flush-Out as described in paragraph 3.06 of this Section.

3.4 PROTECTION

A. Moisture Protection: Protect interior materials from water intrusion or penetration as described in Section 01 60 00 Product Requirements.
1. Porous or fibrous materials with visible microbial growth shall not be installed.
2. Non-porous materials with visible microbial growth shall be decontaminated.

B. Duct Protection: during dust-producing activities (e.g. sanding, cutting, or grinding), or when VOC-Emitting Materials (as described in paragraph 1.04 above} are being installed, implement the following measures:
   1. If possible, damper off the return (negative pressure) side of HVAC air distribution system and seal return system openings with polyethylene sheet.
   2. If HVAC system must be operated during dust-producing activities, provide temporary construction air filters with a minimum MERV rating of 8 at all return air grilles.
   3. If HVAC supply air is off, protect diffusers and openings with polyethylene sheet.

3.5 CLEANING

A. Provide the following cleaning in addition to requirements described in Section 01 70 00 Execution Requirements:
   1. Clean all coils, air filters, and fans prior to Testing and Balancing.
   2. If significant dust collection is observed at diffusers, return air grilles, or in ducts, clean prior to system start-up.

3.6 BUILD FLUSH-OUT

A. Just prior to Substantial Completion, but following Testing and Balancing, flush out building using the building HVAC system, maintaining a minimum temperature of 60° F and maximum 60% relative humidity. Provide a total of 14,000 cubic feet of outside air per square foot of floor area building flush out as follows:
   1. Prior to building occupancy, provide 3,500 cubic feet of outdoor air per square foot of floor area.
   2. Following building occupancy, provide a minimum ventilation rate of 0.30 cfm/sq. ft. of outside air or the design minimum outside air rate, whichever is greater. Maintain these conditions beginning a minimum of three (3} hours prior to daily occupancy and extending through daily occupancy hours, until the remainder of the 14,000 cfm of outside air per square foot of floor area is achieved.

B. Insure that MERV 13 air filters are in place during Building Flush-Out.

C. Installation of furniture and equipment may occur during Building Flush-Out.

D. Return ventilation system to normal operation following Building Flush-Out period to minimize energy consumption.

E. Immediately following Building Flush-Out, replace air filters with new MERV 13 air filters. Air filters that handle solely outside air need not be replaced.

END OF SECTION 01 81 19

APPENDIX A

CONSTUCTION INDOOR AIR QUALITY (IAQ) PLAN

CONTRACTOR [CONSTUCTION MANAGER]:

Name: _____ Title: _____

Telephone: _____ Fax: _____

Email: _____

I have read and understood and will implement the following Construction IAQ Plan:

Signature _____ Date: _____

1. CONSTRUCTION VENTILATION

List all project materials requiring Construction Ventilation per Specification Section 01 81 19. Attach additional sheet if necessary.	
Y / N	Ventilation will be supplied via open windows, temporary ducts, and temporary fans. If "Y", then supply air diffusers, return air grilles, and/or open ducts will be sealed.
Y / N	Ventilation will be supplied via area exhaust fans. If "Y", check applicable: ☐ Supply air diffusers, return air grilles, and/or open ducts will be sealed. Make-up air will be provided through open windows or doors or other transfer air devices. ☐ HVAC system will provide make-up air. Return air grilles will be sealed.

Y / N	Ventilation will be supplied via building's HVAC system. If "Y", check applicable: ☐ Return air grilles are sealed. Exhaust is provided via open windows or doors. ☐ Return air grilles are used for exhaust. HVAC will provide 100% outside air. Air filters with a minimum MERV rating of 8 will be provided at return air grilles.
☐ Required	Areas will be ventilated directly to outside. No ventilated air will be returned.
☐ Required	Ventilation will provide no less than three air changes per hour.
☐ Required	Ventilation will be continuous for a period no less than 72 hours after completion of installation.
☐ Required	All filtration used during Construction Ventilation will be replaced prior to Substantial Completion.

2. PRECONDITIONING

List all project materials requiring Construction Ventilation per Specification Section 01 81 19. Attach additional sheet if necessary.	
Y / N	Preconditioning will occur in dry and well-ventilated offsite location. If "Y": Where is the offsite location?
Y / N	Preconditioning will occur onsite. If "Y", check applicable: ☐ Ventilation will be supplied via open windows, temporary ducts, and tern- porary fans. See I.2a above. ☐ Ventilation will be supplied via area exhaust fans. See I.2b above. ☐ Ventilation will be supplied via building's HVAC system. See I.2c above.
☐ Required	Containers and packaging will be removed prior to Preconditioning.
☐ Required	Preconditioning will occur for fourteen (14) continuous days prior to installation.

3. SEQUENCING

List all project materials requiring Construction Ventilation per Specification Section 01 81 19. Attach additional sheet if necessary.	
☐ Required	Previously installed Porous or Fibrous Materials located in a room where VOC-Emitting Materials are to be installed will be protected with polyethylene vapor retarder. Polyethylene will not be removed until completion of a 72-hour ventilation period.
☐ Required	Installation of interior finish materials will complete fourteen (14) days prior to SuBstantial Completion.

4. PROTECTION

List all project materials requiring Construction Ventilation per Specification Section 01 81 19. Attach additional sheet if necessary.	
☐ Required	Porous or Fibrous Materials with visible microbial growth shall not be installed.
☐ Required	Materials that are not defined as Porous or Fibrous with visible microbial growth shall be decontaminated prior to installation.
☐ Required	Temporary ventilation will be provided during all dust producing activities. See Item I Construction Ventilation above. All supply air diffusers and return air grilles will be covered.
☐ Required	Ducts will be sealed during transportation, delivery, and construction.

END OF APPENDIX A

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SECTION 09 29 00 - GYPSUM BOARD AND SHEATHING SUBSTRATES

PART 1 - GENERAL

1.01 PRINCIPAL WORK IN THIS SECTION

A. The requirements of the **Owner's** General and Supplementary Conditions, and Division 0 and Division 1 general requirements apply to the work of this Section.
B. Coordinate the work of this Section with related trades.
C. Verify applicable dimensions at the job site.
D. Furnish materials and perform labor required to execute this work as indicated on the drawings, as specified herein and as necessary to complete the work required by project conditions, including but not limited to:
   1. Interior: Gypsum wallboard and sheathing
   2. Joint treatment
   3. Surface treatment – Interior:
   4. Surface treatment and fastener treatment – Exterior:
   5. Sealants and Backer rod
   6. Drywall Primer / Sealer
   7. Related accessories

1.02 REFERENCE STANDARDS

A. 2022 California Code of Regulations (CCR), Title 24, California Building Standards Commission (CBSC) www.bsc.ca.gov current edition at time of permit issuance.
B. (CCR) Title 24, (CBSC) Chapter 11 – California Green Building Standards Code
   1. Non-residential new construction
      a. All occupancy types
C. ATBCB ADAAG - Americans with Disabilities Act Accessibility Guidelines, current version.
D. American Society For Testing and Materials (ASTM) www.astm.org
   1. ASTM C 36 Specification for Gypsum Wallboard
   2. ASTM C 79 Specification for Gypsum Sheathing - Paper faced (Glass mat faced, see ASTM C1177)
   3. ASTM C 473 Standard Test Methods for Physical Testing of Gypsum Panel Products
   4. ASTM C 475 Standard Spec for Joint Compound & Joint Tape for Finishing Gypsum Board
   5. ASTM C 518 Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
   6. ASTM C 840 Standard Spec for Application and Finishing of Gypsum Board
      a. Comply with applicable requirements including recommendations of manufacturer, and comply with more restringent specifications as herein specified.
   7. ASTM C 931 Specification for Exterior Gypsum Soffit Board
   8. ASTM C 1177 Standard Spec for Glass Mat Gypsum Substrate for Use as Sheathing
   9. ASTM C 1178 Standard Spec for Glass Mat Water-Resistant Gypsum Backing Panel
   10. ASTM C1396 Specification for Gypsum Board
   11. ASTM D 3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber
   12. ASTM E 72 Standard Test Methods of Conducting Strength Tests of Panels for Building Construction
   13. ASTM E 96 Standard Test Methods for Water Vapor Transmission of Materials
E. Gypsum Association (GA) www.gypsum.org
   1. GA-214 Recommended Levels of Gypsum Board Finish
   2. GA-216 Specifications for the application and Finishing of Gypsum Board
   3. GA-220 Gypsum Board Winter Related Installation Recommendations
   4. GA-221 Repair of Gypsum Board Joint Ridging
   5. GA-223 Gypsum Panel Products Types, Uses, Sizes, And Standards

6. GA-224 Installation of Predecorated Gypsum Board
7. GA-225 Repair of Fire-Rated Gypsum Board Systems
8. GA-226 Application of Gypsum Board To Form Curved Surfaces
9. GA-229 Shear Values for Screw Application OF Gypsum Board On Walls
10. GA-231 Assessing Water Damage to Gypsum Board
11. GA-232 Painting New Gypsum Board
12. GA-234 Control Joints For Fire-Resistant Rated Systems
13. GA-235 Gypsum Board Typical Mechanical and Physical Properties
14. GA-238 Guidelines for Prevention Of Mold Growth On Gypsum Board
15. GA 253 Application Of Gypsum Sheathing
16. GA-254 Fire-Resistant Gypsum Sheathing
17. GA-276 Gypsum Board Roof Underlayment Systems
18. GA-290 Gypsum Board Area Separation Walls
19. GA-530 Design Data - Gypsum Board
20. GA-600 Fire resistant Design Manual
21. GA-605 Proprietary Gypsum Panels Products For Use In UL Classified Systems
22. GA-610 Fire resistance Provided By Gypsum Board Membrane Protection
23. GA-618 Building and Inspecting Smoke Barriers
24. GA-620 Gypsum Area Separation Firewalls
25. GA-801 Handling and Storage of Gypsum Panel Products

F. International Code Council (ICC), www.iccsafe.org
G. United States Gypsum (USG) www.usg.com
1. SA927 Application And Finishing Of Gypsum Panel Products
2. SA923 Drywall/Steel Framed Systems
3. SA924 Drywall/Wood Framed Systems
4. SA925 USG Area Separation Fire Wall/Party Wall Systems
5. SA926 USG Cavity Shaft Wall Systems
6. SA933 “Sheetrock” Brand Textures and Finish Products

H. Federation of Societies for Coating Technology (FSCT) www.coatingssocietiesinternational.org
1. Coatings Encyclopedic Dictionary

I. Painting and Decorating Contractors of America (PDCA) www.pdca.org
1. Standard P1-92 Touch Up Painting and Damage Repair
2. Standard P4-94 Responsibility for Inspection and Acceptance of Surface Prior to Painting and Decorating
3. Standard P5-94 Benchmark Sample Procedures for Paint and Other Coating System
4. Glossary of Terms, Painting and Decorating Contractors of America, Fairfax, VA.

J. Drywall Finishing Council Incorporated (DWFC) www.dwfc.org
1. Recommended Specification for Preparation of Gypsum Board Surfaces Prior to Texture Application.
2. Interior Job Condition Specifications for the Application of Drywall Joint Compounds, Drywall Textures, and Paint/Coatings.

K. National Evaluation Report (NER)
1. NER 458 Code Compliance for Exterior Ceiling Sheathing (Soffit sheathing)
2. NER 258 USG Drywall Shaft Partition Systems

1.03 PERFORMANCE

A. **General:**
1. Comply with manufacturer’s standards.
2. Comply with Building Code.
3. Job site inspections shall be done as herein specified and as listed in drawings.

B. **Standards:**

Item	Name of Test	Performance	Testing Std.

Gypsum Board / Sheathing & Sound Board	Flatness Tolerance	1/8” offsets between planes of board faces and 1/8” in 10 feet or plumb, level, warp and bow. Tolerance variation shall not be collective.	Gypsum Association
Gypsum Board / Sheathing	Recommended Levels of Gypsum Board Finish	Comply or as herein specified, whichever is more restrictive	GA-214-07 ANSI A98-7.1
	Application and Finishing of Gypsum Panel Products		GA-216-07
	Gypsum Board Winter Related Installation Recommendations		GA-220-06
	Repair of Gypsum Board Joint Ridging		GA-221-00
	Repairing Screw or nail Pops		GA-222-08
	Gypsum Panel Products Types, Uses, Sizes and Standards		GA-223-04
	Installation of Pre-decorated Gypsum Board		GA-224-08
	Repair of Fire-Rated Gypsum Board Systems		GA-225-08
	Application of Gypsum Board to Form Curved Surfaces		GA-226-08
	Shear Values for Screw Application of Gypsum Board on Walls		GA-229-08
	Assessing Water Damage to Gypsum Board		GA-231-06
	Painting New Gypsum Board		GA-232-04
	Control Joints for Fire-Resistance Rated Systems		GA-234-08
	Gypsum Board Typical Mechanical and Physical Properties		GA-235-05
	Joint Treatment Under Extreme Weather Conditions		GA-236-00
	Guidelines for Prevention of Mold Growth on Gypsum Board		GA-238-03
	Water-Resistant Gypsum Backing Board For Ceramic Tile in Wet Areas		GA-239-04
	Application of Gypsum Sheathing		GA-253-07
	Fire-Resistant Gypsum Sheathing		GA-254-07
	Gypsum Board Roof Underlayment Systems		GA-276-05
	Gypsum Board – Area Separation Walls		GA-290-02
	Fire Resistance Design Manual		GA-600-06
	Proprietary Gypsum Panel Products For Use in UL Classified Systems		GA-605-08
	Fire Resistance Provided by Gypsum Board Membrane Protection		GA-610-02
	Building and Inspecting Smoke Barriers		GA-618-04

	Handling and Storage of Gypsum Panel Products: A Guide for Distributors, Retailers, and Contractors		GA-801-07
Exterior Gypsum sheathing	Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber	10 minimum	ASTM D 3273
Exposed interior Gypsum Sheathing	Smooth Wall		
Smooth Wall / Level 5	Smooth Wall with Darby full surface float		
Refer to drawings and as herein specified			

C. **Sustainability:**
   1. Refer to Division 1 sustainability requirements.
   2. Refer to product criteria identified herein.

D. Definitions
   1. Levels of gypsum board finish: (Typical)
      a. **Scope.** The required level of finish of gypsum board wall and the ceiling surfaces is described with typical applications and is listed as a minimum allowable standard. All proposed deviations from these herein specifications shall be in written form of a request and approved by the **Architect** prior to installation.
      b. **Terminology.** The following definitions are applicable to this document.
         1. Accessories: Metal or plastic beads, trim or molding used to protect or conceal corners, edges or abutments of the gypsum board construction.
         2. Back Roll: Rolling a spray painted surface with a paint roller immediately following spray application.
         3. Coat: Paint, Varnish, or lacquer applied to a surface in a single application (one Layer) to form a properly distributed film when dry –ASTM
            Note: Shall be applied as installed per Painting specification.
         4. Critical (Severe) Lighting: A condition whereby interior surfaces are flooded by natural or artificial lighting at an oblique angle; such as lighting from large expanses of windows, glass curtain walls, skylights, or surface mounted light fixtures. Strong side lighting from windows or surface-mounted light fixtures. - ASTM
            Note: See "comments" section of this document.
         5. Drywall Primer: A paint material specifically formulated to fill the pores and minimize suction differences between gypsum board surfaces paper and the compound used on finished joints, angles, fastener heads, accessories, and over skim coating.
            Note: this shall be applied as part of gypsum board specification
         6. Gloss: A subjective term used to describe the relative amount and nature of mirror like (specular) reflection.
            Note: FSCT
         7. Joint Photographing (Telegraphing): The shadowing of the finished joint areas through the surface decoration and/or Smooth Wall
            Note: Syn telegraphing. – GA-214-96
         8. Paint: Any pigmented liquid, liquefiable, or mastic composition designed for application to a substrate as a thin layer which is converted to an opaque solid film after application. Used for protection, decoration or identification or to serve some functional purpose, such as filling or concealing surface irregularities.
            Note: FSCT, shall be applied as part of painting specification
         9. Properly Painted Surfaces: A surfaces that is uniform in appearance, color and sheen. It is one that is free of foreign material, lumps skins, runs, sags, holidays, misses, strike-

through, or insufficient coverage. It is a surface, which is free of drips, spatters, spills, or overspray, which were caused by the **General Contractor's** work force. Compliance to meeting the criteria of a "Properly painted surface" shall be determined when viewed without magnification at a distance of five feet or more under normal lighting conditions and form a normal viewing position.

Note: A surface uniform in appearance, color and sheen may not be achieved with a coat

of primer or a single coat of topcoat. Shall be applied as part of Painting specification. – PDCA

10. Prime/Sealer: A gypsum board prime/sealer manufactured by company explicitly for priming gypsum board and formulated to fill the pores and equalize the suction difference between gypsum board surface paper and the compound used on finished joints, angles, fastener heads, and accessories, and over skim coatings. See "comments" section of this document.
    Note: Primer shall be provided by Gypsum board mfgr. and installed by gypsum board finisher in addition to "primer and finish paint as installed under separate specification Section 09 90 00."
11. Skim Coat: A thin coat of herein listed joint compound installed over the entire surface of the gypsum board to fill imperfections in the joint work, smooth the paper texture, and provide a uniform surface for a Smooth Wall appearance. Compound will be installed with Steel Trowel or Knife blade.
    Note: Spray application is not allowed
12. Spotting: To cover fastener head with joint compound.
13. Texture: A decorative treatment of gypsum board surfaces.
14. Texturing: Regular or irregular patterns typically produced by applying a mixture of joint compound and water, or proprietary texture materials including latex base texture paint, to a gypsum board surface previously coated with primer/sealer.
    Note: Refer to Heading 2.05
15. Top Coat: The finish coat(s) of a coating system, formulated for appearance and or environmental resistance.
    Note: shall be applied as part of painting specification – PDCA
16. Wall covering: Any type of paper, vinyl, fabric, or specialty material that is pasted onto a wall or ceiling in a wide array of colors, patterns, textures, and performance characteristics, such as washability and abrasion resistance.
    Note: shall be applied as part of wall covering specification - FSCT
17. Wall covering Primer: Coatings formulated to seal the porosity of new drywall, joint compounds, and most surfaces. Also formulated to promote adhesion and serviceability under wall covering products.
    Note: Shall be applied as part of wall covering specification.

1.04 SUBMITTALS AND MOCK-UPS

A. Refer to Division 1 for substitution, deviation and/or submittal procedures.
B. Submit O&M (Operation and Maintenance) manuals in accordance with Division 1 requirements and as herein specified.
C. Refer to Division 1 for sustainability requirements
D. Submit Manufacturer's data and shop drawings.
    1. Drywall products
    2. Joint tapes for Interior and Exterior applications
    3. Joint topping material
    4. Skim coat joint compound material – Smooth wall Level 5
    5. Fasteners
    6. Tools for product application
    7. Texturing products
E. Submit samples.
    1. Three (3) each 20" square portable mockups on gypsum board that include:

a. Finish taping, mud and primer
b. Butt joint treatment
c. Edge treatment
d. Specific required finishes

F. Site mock up, refer to “Field Samples / Mock Up” heading.

1.05 QUALITY ASSURANCE

A. Refer to Division 1 for quality control requirements.
B. Contractor / Installer / Fabricator shall have been in business for **Five (5)** years providing/installing/finishing similar size projects and complexity.
C. Manufacturer shall have been in business for **Five (5)** years providing/installing/finishing similar size projects and complexity.
D. Lead Times:
1. **General Contractor** shall coordinate with supplier to verify product lead times during bids and at award of contract, and account for such lead times in their costs and schedules.
2. **General Contractor** shall provide an itemized list of materials which might have or are confirmed to have a lead time problem and what the anticipated lead time is.
3. **General Contractor** shall certify in writing that all materials have acceptable lead times as they relate to availability for sub-contractor and **General Contractor** to meet construction schedule and sequence of construction.
4. Material with lead times in question or confirmed to be in conflict with meeting the schedule and sequence of construction must me documented at time of bid.

E. Stipulations:
1. At proprietary assemblies use specified and tested manufacturer and specific products, including but not limited to the gypsum board, fastening, etc.

F. Pre-Installation Conference: A pre-installation conference shall be held prior to commencement of field operations to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work.
1. Agenda for meeting shall include, but not be limited to; review of Smooth wall, taping for various wall coverings and texture of wall.
2. **General Contractor** shall request meeting 5 days in advance of construction.
1. Manufacturer’s Representative: Make arrangements necessary to have a trained employee of the manufacturer on-site periodically during installation membrane waterproofing work to review installation procedures. Manufacturer’s representative shall review and certify all phases of construction to verify the complete work meets specification requirements.
2. Written certification of all phases of construction shall be sent to the **Architect** by the manufacturer’s representative.

1.06 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Refer to Division 1 for product delivery, storage and handling requirements.
B. Comply with manufacturers recommendations

1.07 JOB CONDITIONS

A. Field-verify that all components, substrates, backing, etc. provided by others are installed correctly before proceeding with installation of products as herein specified.
B. Environmental:
1. Interior: Do not install gypsum board, joint compounds, skim coats and textures if building temperature is below 55ºF or if proper ventilation is not provided to eliminate excessive moisture from building.
a. Temperature shall be maintained after installation.
2. Exterior: Do not install gypsum board, joint compounds, skim coats and textures if the exterior temperature is below 45ºF.

1.08 PROTECTION

A. Protect finish surfaces at all times from surfaces and material adjacent to them.

B. Finish work defaced with other materials on surface shall be replaced.
C. Protect work under this section from damage by other trades.

1.09 GUARANTEE / WARRANTY

A. Refer to Division 1 for closeout submittal procedures.
B. Furnish initial **one (1)** year written warranty signed by manufacturer and installer agreeing to repair and/or replace work which has failed as a result of defects in materials or workmanship.
   1. Upon notification of **Owner** within the warranty period, such defects shall be repaired and replaced at no cost to the **Owner**.
C. Furnish manufacturer's additional warranty plus (1) year warranty agreeing to repair and/or replace work which has failed as a result of defects in materials or workmanship.
   1. Upon notification of **Owner** within the warranty period, such defects shall be repaired and replaced at no cost to the **Owner.**

1.10 RELATED WORK/SECTIONS

A. Related work includes, but is not limited to, the following:
   1. Wall Framing
   2. Electrical/Low Voltage Wiring & Devices
   3. Wall Finish for Mechanical Work
   4. Wall coverings
   5. Rated wall penetrations
   6. Acoustical wall assemblies and penetrations
B. Related Sections include, but are not limited to, the following**:**
   1. Division 1
   2. Section 09 90 00 – Paints and Coatings

1.11 OPERATION AND MAINTENANCE DATA

A. Submit as part of project closeout:
   1. Complete instructions regarding maintenance of the materials, finishes, etc.
   2. Refer to Division 1 for closeout submittal procedures.

1.12 SEQUENCING AND SCHEDULING

A. Schedule work and sequence with **General Contractor**.
B. Schedule required testing, prior to the installation of materials, components, etc.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Single source responsibility, specified items shall be from one manufacturer for each product type.
B. Acceptable manufacturers shall be one of the following and as herein listed and in Drawings:
   1. Gypsum sheathing (Interior):
      a. Typical and as indicated:
         1. Georgia Pacific (GP), www.gp.com
         2. U.S Gypsum (USG), www.usg.com
         3. National Gypsum, Gold Bond www.national-gypsum.com
      b. Where indicated:
         1. U.S Gypsum (USG), www.usg.com
      c. Alternates where allowed:
         1. National Gypsum, Gold Bond & GridMarx, www.national-gypsum.com
         2. Pabco Gypsum, www.pabcogypsum.com
   2. Gypsum sheathing (Exterior):
      a. Typical and as indicated:
         1. Georgia Pacific (GP), www.gp.com
         2. U.S Gypsum (USG), www.usg.com
         3. National Gypsum, Gold Bond www.national-gypsum.com

b. Where indicated:
1. National Gypsum, Gold Bond, www.national-gypsum.com

3. Sound Deadening sheathing (Interior):
a. Homasote – Typical www.homasote.com
4. Joint treatment & finishing (Interior & Exterior)
a. U.S Gypsum (USG), www.usg.com
b. National Gypsum, Gold Bond www.national-gypsum.com
c. Georgia Pacific (GP), www.gp.com
d. Bead-Ex www.usg.com
e. Hamilton www.hamiltonnw.com
5. Accessories:
a. U.S Gypsum (USG), www.usg.com
b. National Gypsum, Gold Bond & GridMarx, www.national-gypsum.com
c. Superior Metal Trim www.superiormetaltrim.com
d. Flannery, Inc., 818 837-7585, www.flannerytrim.com
e. Fry Reglet www.fryreglet.com
f. MILGO/BUFKIN, www.milgo-bufkin.com
6. Reveals/End Caps:
a. Flannery, Inc., 818 837-7585, www.flannerytrim.com
b. Superior Metal Trim www.superiormetaltrim.com
c. Fry Reglet www.fryreglet.com
d. MILGO/BUFKIN, www.milgo-bufkin.com
e. Liquid applied waterproof membrane – Laticrete, www.Laticrete.com
7. Sealants:
a. Pecora, www.precora.com
b. Refer also to Sealant Specification Section 07 92 00.
8. Reviewed Equivalent by **Architect**.
a. Substitutions and deviations shall require **Architect's** approval and shall be given in letterform.
b. Refer to Division 1 for substitution, deviation and/or submittal procedures.
c. Proposed alternate products must be equal in terms of chemical composition, color, finish, configuration, performance standards, etc.

C. All products and materials indicated shall be installed according to current listed specification requirements and manufacturers specifications/recommendations.
D. Refer to drawings, details, and other related specification section whether listed or not.
E. Details shall set basic requirements for size and configuration of systems.

2.02 MATERIALS

A. General
1. Conform to American National Standards Institute Specifications and Gypsum Association for Gypsum Wallboard finishes.
2. Sheathing type as herein specified and in accordance with manufacturer's recommendations.
3. Wall board shall be fire-rated typical, Type "X" typical, U.N.O. and comply with specified and detailed wall construction types.

B. Wallboard & Ceiling Board Sheathing
1. **INTERIOR SCHEDULE:**
a. General:
1. Type X Core, Fire Code C and/or Type XXX regarding if application is a rated assembly
b. Interior walls, u.n.o.:
1. Mfgr:
a. Typical: Georgia Pacific
b. Alternate 1: US Gypsum
c. Alternate 2: Pabco
d. Alternate 3: Nation Gypsum, Gold Bond

2. Brand:
   a. Typical: ToughRock®Fireguard Type X
   b. Alternate 1: Sheetrock
   c. Alternate 2: Flame Curb
   d. Alternate 3: Fire Shield
3. Product:
   a. Typical: Type “X” Core
   b. Alternate 1: Firecode “C” Core (if specific to approved design)
4. Size:
   a. Thickness:
      1. 5/8” typical
      2. 1/2” as indicated per plan details
   b. Width x Length: 4’-0” wide x 8’, 9’, 10’, 12’ or 14’ (size to minimize quantity of joints)
5. Material: Paper faced gypsum core board
6. Edge: Tapered
7. Standard: ASTM C36
8. Finish: As herein specified and indicated in drawings
9. Limitations:
   a. See body of this specification for specific product types for specific conditions.
   b. At interior face of Exterior walls use Dens Armour Plus Fireguard, High Performance Interior Panel as herein specified unless herein in indicated otherwise or an herein approved alternate.

c. Interior Face of Exterior Walls:
   1. Application: Wall Sheathing
      a. Full height from floor to underside of roof decking.
      b. Exposed and concealed conditions
   2. Schedule: Full Height
      a. Material:
         1. Schedule:
            a. Mfgr: Georgia Pacific
            b. Product: Dens Armour Plus® Fireguard® Type X, High Performance Interior Panel
            c. Size: 5/8”x 4’-0”x 8’ & 10’(size to minimize quantity of joints)
            d. Material: Gypsum sheathing with inorganic coated glass fiber mats on each face
            e. Edge: Tapered
            f. Rating: Type “X”
      b. Limitations:
         1. Do not use at the following locations requiring other sheathing as herein specified under the ‘Wallboard & Ceiling Board for Interior conditions.
            a. Curved walls – Specialty board - Non rated:
            b. Curved walls – Non rated:
            c. Shaft wall sheathing:
            d. Abuse-resistant Impact locations – Moderate Duty:
            e. Abuse-resistant Impact locations – Heavy Duty:
            f. Wet locations – Showers:
            g. Shaft wall sheathing:
            h. Veneer wall and ceiling – non shower locations
            i. Cement Plaster substrate:
            j. Fully adhered Natural Stone substrate
            k. Sound Damping Wall board:
            l. Sound Damping Ceiling board:
            m. Modular Brick Substrate

3. Finish: As herein specified and indicated in drawings including skim coat over entire surface prior to finishing.

d. Curved walls – Specialty board - Non rated:
   1. Mfgr:
      a. Typical: US Gypsum
      b. Alternate 1: National Gypsum
   2. Brand:
      a. US Gypsum: Sheetrock
      b. National Gypsum: High Flex
   3. Product:
      a. Typical: Flexible Gypsum Panels
      b. Alternate 1: High-Flex Wall Board
   4. Size:
      a. Thickness: ¼"
      b. Width x Length: 4'-0" wide x 8', 9', 10'
   5. Material: Paper faced gypsum core board
   6. Edge: Tapered
   7. Radius Schedule: (minimum)
      a. Lengthwise:

	Application:	Condition:	Bend Radii:	Max. Stud Spacing:
1.	Inside – Concave	Dry	32"	9" o.c.
2.	Inside – Concave	Wet	20"	9" o.c.
3.	Outside – Convex	Dry	32"	9" o.c.
4.	Outside – Convex	Wet	15"	6" o.c.

      b. Widthwise:

	Application:	Condition:	Bend Radii:	Max. Stud Spacing:
1.	Inside – Concave	Dry	20"	9" o.c.
2.	Inside – Concave	Wet	10"	6" o.c.
3.	Outside – Convex	Dry	11"	6" o.c.
4.	Outside – Convex	Wet	7"	6" o.c.

   8. Finish: As herein specified and indicated in drawings
   9. Limitations:
      a. Inside face of exterior walls shall be type governed by this specific location requirements.
      b. Damp and wet locations shall be type governed by this specific location requirements.
      c. Tile and stone veneer locations shall be type governed by this specific location requirements.

e. Curved walls – Non rated:
   1. Mfgr:
      a. Typical: US Gypsum
      b. Alternate 1: National Gypsum
   2. Brand:
      a. US Gypsum: Sheetrock
      b. National Gypsum: Gold Bond
   3. Size:
      a. Thickness per sheet:
         1. 1/4" (2 layers minimum)
            a. 3'- 0" minimum radius with dry panel and panel installed with long direction perpendicular to framing.
         2. 3/8" typical
            a. 6'-0" minimum radius with dry panel and panel installed with long direction perpendicular to framing.

3. ½" as allowed for wall curve by gypsum board mfgr:
   a. 12'- 0" minimum radius with dry panel and panel installed with long direction perpendicular to framing.

b. Width x Length:
   1. 4'-0" wide x 8', 9', 10', 12' or 14' – ½" & 3/8" thick
   2. 4'-0" x 8' or 10' – ¼" thick

4. Material: Paper faced gypsum core board
5. Edge: Tapered
6. Finish: As herein specified and indicated in drawings
7. Limitations:
   a. Inside face of exterior walls shall be type governed by this specific location requirements.
   b. Damp and wet locations shall be type governed by this specific location requirements.
   c. Tile and stone veneer locations shall be type governed by this specific location requirements.

f. Curved walls - Rated:
1. Mfgr:
   a. Typical: Georgia Pacific
   b. Alternate 1: US Gypsum
   c. Alternate 2: Pabco
   d. Alternate 3: Nation Gypsum, Gold Bond
2. Brand:
   a. Typical: ToughRock®Fireguard Type X
   b. Alternate 1: Sheetrock
   c. Alternate 2: Flame Curb
   d. Alternate 3: Fire Shield
3. Product:
   a. Typical: Type "X" Core
   b. Alternate 1: Firecode "C" Core (if specific to approved design)
   c. Alternate 2: Type XXX
4. Size:
   a. Thickness:
      1. ½"
         a. 12'- 0" radius with dry panel and panel installed with long direction perpendicular to framing
         b. 2 or more layers as required meeting wall design gypsum board thickness.
      2. 5/8"
         a. 18'- 0" radius with dry panel and panel installed with long direction perpendicular to framing.
         b. 2 or more layers as required meeting wall design gypsum board thickness.
   b. Width x Length: 4'-0" wide x 8', 9', 10', 12' or 14'
5. Material: Paper faced gypsum core board
6. Edge: Tapered
7. Finish: As herein specified and indicated in drawings
8. Limitations:
   a. Inside face of exterior walls shall be type governed by this specific location requirements.
   b. Damp and wet locations shall be type governed by this specific location requirements.
   c. Tile and stone veneer locations shall be type governed by this specific location requirements.

g. Damp locations: (Non tile veneer conditions)

1. Application:
   a. Toilet room walls & ceilings
   b. Janitor room walls & ceilings
   c. Locker rooms & weight rooms

2. Schedule: Full Height
   a. Material:
      1. Mfgr: Georgia Pacific
      2. Product: Dens Armour Plus® Fireguard® Type X, High Performance Interior Panel
      3. Size: 5/8”x 4’-0”x 8’ & 10’(size to minimize quantity of joints)
      4. Material: Gypsum sheathing with inorganic coated glass fiber mats on each face
      5. Edge: Tapered
      6. Rating: Type “X”
      7. Joints: Self adhering fiberglass mesh tape and approved tapping compound
3. Limitations:
   a. **Maximum ceiling framing not to exceed 12” o.c.**
   b. Do not use at shower ceilings, use Dens Shield Tile Guard (Backer Board)
   c. Do not use at shower walls, use Dens Shield Tile Guard (Backer Board)
4. Standards: ASTM C630
5. Finish: As herein specified and indicated in drawings

h. <u>Abuse-resistant Impact locations – Moderate Duty:</u>
   1. Schedule:
      a. Where indicated on drawings
      b. 4’-0” above finish floor unless noted otherwise in;
         1. Storage rooms
         2. Janitor rooms
         3. Mechanical rooms
         4. Kitchens
   2. Mfgr: USG
   3. Product:
      a. Series: Fiberock
      b. Model: Aqua-Tough
      c. Rating: Type ‘FRG-G’
         1. Smoke Developed: 0
         2. Flame Spread: 5
   4. Size: 5/8” x 4’-0” wide x 8’, & 12’ (size to minimize quantity of joints)
   5. Recycled content: 95%
   6. Edge: Tapered
   7. Limitations:
      a. Wall framing not to exceed 16” o.c.
      b. Ceiling framing not to exceed 16” o.c.
   8. Standards: ASTM C630, C1178, D4977 and D5420
   9. Finish: As herein specified and indicated in drawings

i. <u>Abuse-resistant Impact locations – Heavy Duty:</u>
   1. Schedule:
      a. Where indicated on drawings
      b. 4’-0” above finish floor unless noted otherwise in;
         1. School Hallways
         2. Garages
   2. Mfgr: USG
   3. Product:

a. Series: Fiberock
b. Model: VHI
c. Rating: Type 'FRG-G'
1. Smoke Developed: 0
2. Flame Spread: 5
4. Size: 5/8" x 4'-0" wide x 8', & 12' (size to minimize quantity of joints)
5. Material: [Fill in]
a. Characteristics:
1. Abuse resistant
2. Water resistant
3. Mold resistant
4. Finishing flexible
6. Recycled content: 95%
7. Edge: Tapered
8. Limitations:
a. Wall framing not to exceed 16" o.c.
b. Ceiling framing not to exceed 16" o.c.
9. Standards: ASTM C630, C1178, D4977 and D5420
10. Finish: As herein specified and indicated in drawings

j. Wet locations – Showers and water walls:
1. Applications:
a. Shower room walls and ceilings with Tile veneer
1. Schedule:
a. Mfgr: Georgia Pacific
b. Product: Dens Shield® Fireguard® Type X Tile Backer
c. Size: 5/8" x 4'-0" wide x 4'', 5', & 8' (size to minimize quantity of joints)
d. Material: Surface coated fiberglass and silicone-treated core
e. Edge: Square
f. Joints: Self adhering fiberglass mesh tape and approved tapping compound
g. Rating: Type X, UL approved for 1-hour wall construction
h. Joints: Self adhering fiberglass mesh tape and approved tapping compound
2. Note: Water proof liquid applied membrane, joint mesh and accessories; refer to Tile specifications.
b. Shower ceilings without Tile veneer
1. Schedule:
a. Mfgr: Georgia Pacific
b. Product: Dens Shield Tile Guard (Backer Board)
c. Size: 5/8" x 4'-0" wide x 4'', 5', & 8' (size to minimize quantity of joints)
d. Material: Surface coated fiberglass and silicone-treated core
e. Edge: Square
f. Joints: Self adhering fiberglass mesh tape and approved tapping compound
g. Rating: UL approved for 1-hour wall construction
h. Finish: Skim Coat for Level 5 finish
i. Note: Water proof liquid applied membrane, joint mesh and accessories; refer to Tile specifications.

k. Shaft wall sheathing:
1. Application: Vertical, typical, u.n.o.
2. Design: WP-7008 Proprietary

3. Shaft wall panels at elevators and as indicated by Plan Document "Wall Types"
4. Mfgr: As herein listed
5. Material: Paper faced Gypsum core
6. Products:
   a. Liner Board
      1. SHEETROCK® Brand, USG
         a. Edge: Square
         b. Thickness: 1"
         c. Width: 24"
         d. Length: As required
         e. Classification: UL Label
      2. Toughrock, Georgia Pacific
         a. Edge: Square
         b. Thickness: 1"
         c. Width: 24"
         d. Length: As required
         e. Classification: Type X

   b. Face Board
      1. SHEETROCK® Brand, FIRECODE® USG
         a. Edge: Tapered (SW)
         b. Thickness: 1/2", 5/8" and ¾"
         c. Width: 4'-0"
         d. Length: As required
         e. Classification: Firecode C Core
      2. Toughrock, Georgia Pacific
         a. Edge: Tapered
         b. Thickness: 1/2" and 5/8"
         c. Width: 4'-0"
         d. Length: As required
         e. Classification:
            1. 5/8": Type X
            2. ½": Fireguard C
7. Finish: As herein specified and indicated in drawings

l. <u>Cement Plaster substrate:</u>
   1. Application: Substrate for Cement Plaster assembly
   2. Schedule:
      a. Option 1:
         1. Mfgr: Georgia Pacific
         2. Product: Dens Glass™ Fireguard® Type X Exterior Sheathing (formally Dens Glass Gold)
         3. Size: 5/8" x 4'-0" wide x 8', 9' and 10' (minimize quantity of joints)
         4. Material:
            a. Face: Glass mat sides – gold color
         5. Edge: Square
         6. Rating:
            a. Designation: Type "X"
            b. Flame spread: 0
            c. Smoke developed: 10 or less
         7. Warranty:
            a. Weather exposure: 12 months
            b. Mfgr. defects: 5 years
         8. Joints: Self adhering fiberglass mesh tape and approved tapping compound

b. Option 2:
   1. Mfgr: National Gypsum
   2. Brand: Gold Bond®
   3. Product: eXP (formally e²XP) Fire Shield® Extended Exposure Sheathing
   4. Size: 5/8" x 4'-0" wide x 8', 9' & 12' (size to minimize quantity of joints)
   5. Material:
      a. Faces: Coated Fiberglass Mat
      b. Color: Purple
   6. Edge: Square
   7. Rating:
      a. Designation: Type "X"
      b. Flame spread: 0
      c. Smoke developed: 10 or less
   8. Warranty:
      a. Weather exposure: 12 months
      b. Mfgr. defects: 5 years
   9. Joints: Self adhering fiberglass mesh tape and approved tapping compound

c. Option 3:
   1. Mfgr: USG
   2. Product: Securock® Glass-Mat Sheathing
   3. Size: 5/8" x 4'-0" wide x 8', 9' & 12' (size to minimize quantity of joints)
   4. Material:
      a. Faces: Coated Fiberglass Mat
      b. Color: Lime Green
   5. Edge: Square
   6. Rating:
      a. Designation: Type "X"
      b. Flame spread: 0
      c. Smoke developed: 10 or less
   7. Warranty:
      a. Weather exposure: 12 months
      b. Mfgr. defects: 5 years
   8. Joints: Self adhering fiberglass mesh tape and approved tapping compound

3. Finish: Level 4

A. Joint Treatment and Skim Coat Treatment - Interior
   1. Schedule:
      a. Applications:
         1. <u>Typical, interior dry conditions, U.N.O</u>
            a. Type:
               1. Drying: water evaporation type unless application is;
                  a. In cold weather
                  b. Required to be Setting Compound by type of tape such as mesh fiberglass
                  c. Required by application
                  d. Required by sheathing mfgr.
            b. Mfgr: USG
            c. Brand: Sheetrock
            d. Tape Product: Joint Tape – Heavy
            e. Treatment Compound:
               1. Product:
                  a. Initial installation of tape:
                     1. Product: Taping Compound
                  b. Secondary and final finishing compound:

1. Product: Toping Compound or Plus Three Compound

c. Skim Coat:
1. Product: Plus Three Compound

2. Interior Face of All Exterior Walls:
   a. Substrate: Dens Armour Plus
      1. Mfgr: Georgia Pacific
   b. Tape Product: Self adhering 10x10 x 2” wide woven glass mesh tape over all joints, inside corners and outside corners
      1. Mfgr: Georgia Pacific
      2. Model: ToughRock, Fiberglass mesh tape
   c. Treatment Compound:
      1. Mfgr: USG
      2. Type: Setting Compound (chemical hardening)
      3. Installation: Per manufacturers recommendations
      4. Finsih: Level 5
         a. Includes as herein specified with the entire surface of sheathing skim coated.

3. Wet conditions - Interior: Tile veneer finish
   a. Substrate: Dens Shield Tile Backer Board
      1. Mfgr: Georgia Pacific
   b. Tape Product: Self adhering 10x10 x 2” wide woven glass mesh tape over all joints, inside corners and outside corners
      1. Mfgr: Georgia Pacific
      2. Model: ToughRock, Fiberglass mesh tape
   c. Treatment Compound:
      1. Mfgr: USG
      2. Type: Setting Compound (chemical hardening)
      3. Installation: Per manufacturers recommendations

4. Wet conditions - Interior: Non tile veneer finish
   a. Substrate: Dens Shield Tile Guard
      1. Mfgr: Georgia Pacific
   b. Tape Product: Self adhering 10x10 x 2” wide woven glass mesh tape over all joints, inside corners and outside corners
      1. Mfgr: Georgia Pacific
      2. Model: ToughRock, Fiberglass mesh tape
   c. Treatment Compound:
      1. Mfgr: USG
      2. Type: Setting Compound (chemical hardening)
      3. Installation: Per manufacturers recommendations
      4. Finish: Darby float Skim coat for level 5 finish and paint

5. Damp conditions – Interior: Non-shower areas
   a. Substrate: Aqua Tough
      1. Mfgr: USG
   b. Tape Product: Self adhering 10x10 x 2” wide woven glass mesh tape over all joints, inside corners and outside corners
      1. Mfgr: Georgia Pacific
      2. Model: ToughRock, Fiberglass mesh tape
   a. Treatment Compound:
      1. Mfgr: USG
      2. Type: Setting Compound (chemical hardening)
      3. Installation: Per manufacturers recommendations
      4. Finish: Darby float Skim coat for level 5 finish and paint

B. Joint Treatment and Skim Coat Treatment – Exterior walls
   1. Schedule:
      a. Typical conditions
         1. Option 1:
            a. Application: Underlayment for wall finishes
               1. Substrate: Dens Glass™ Fireguard® Type X Exterior Sheathing
                  a. Mfgr: Georgia Pacific
               2. Tape Product: Self adhering 10x10 x 2" wide woven glass mesh tape over all joints, inside corners and outside corners
                  a. Mfgr: Georgia Pacific
                  b. Model: ToughRock, Fiberglass mesh tape
               3. Treatment Compound:
                  a. Mfgr: Pecora
                  b. Type: Latex Sealant
                  c. Product: AC-20 Acrylic Latex sealant
                  d. Installation: Per manufacturers recommendations
               4. Fastener treatment: Refer to INSTALLALATION heading

         2. Options:
            a. Application: Underlayment for wall finishes
               1. As herein approved

C. Wall finish, Texture Products and Schedule – Interior
   1. General: Comply with USG Design Guidelines SA923
   2. Finish Schedule:
      a. Finish Texture:
      Level 5 Smooth wall / Skim coat
         1. Standard Texture:
            a. Mfgr: USG
            b. Texture designation:
               1. Textured walls: Fine Orange Peel
               2. Smooth Wall Level Five: No texture
            c. Schedule: At all walls and ceilings, U.N.O
            d. Product Schedule:
               1. Sealer / Primer:
                  a. Material: Gypsum board sealer/primer
                  b. Product: First Coat, Sheetrock brand
                  c. Application: Spray applied over entire surface Material
               2. Texture:
                  a. Material: Red Bag Wall Texture
                  b. Application: Spray applied
                  c. Coverage: Apply at rate of 20-40 pounds per square foot

         2. Smooth Wall / Level 5 – Skim Coat
            a. Mfgr: USG
            b. Texture Designation: Smooth Wall, Level 5 - Darby
            c. Schedule:
               1. Locations indicated on Drawings, including , as herein listed:
                  a. Showers without tile veneer
                  b. Skylight wells
                  c. Public spaces – walls and ceilings
                     1. Curved walls
                     2. Curved soffits, vertical and horizontal

2. As herein specified
    a. Public spaces – walls and ceilings
        1. Lobbies
        2. Corridors
        3. All conditions

d. Product Schedule:
    1. Skim Coat – Smooth Wall Level 5
        a. Material: Plus Three
        b. Application: Steel Trowel applied over entire surface of board.
    2. Sealer /Primer Coat: Level 4 and 5 finish
        3. Material: Gypsum board sealer/primer
        4. Product: First Coat, Sheetrock brand
        5. Application: Spray applied over entire surface
        6. Note: This is in addition to painters primer to be installed per Section 09 90 00 – Painting and Coatings.

PART 3 - EXECUTION

3.01 INSPECTION/EXAMINATION

A. Verification of Conditions:
    1. Examine areas and conditions under which work is to be performed.
    2. Identify conditions detrimental to proper or timely completion of work and coordinate with **General Contractor** to rectify.

B. Surface:
    1. Examine and verify that receiving conditions of substrate have no defects or errors, which would result in poor or potentially defective application or cause latent defects in workmanship.

3.02 COORDINATION

A. Refer to Division 1 for project coordination requirements.
B. **General Contractor** shall coordinate work as herein specified, in accordance with drawings and as required to complete scope of work with all related trades.

3.03 PREPARATION

A. Prepare work, substrates, etc. in accordance with manufacturer's recommendations.

3.04 MOCK-UP

A. Erect at location approved by **Architect**.
    1. Mock-up shall be part of final construction once approved by **Architect**.
    2. Mock-up shall comprise of all components and finishes as specified and indicated in Drawings.
        a. Texture
        b. Level 5 finish

B. Mock-up
    1. Size: 6' x 6'
    2. Qty: One (1) each for each wall surface condition and finish

3.05 INSTALLATION

A. General:
    1. Perform work in accordance with manufacturer's recommendations, as herein specified and in accordance with drawings.
    2. Perform work in accordance with herein listed standards.
    3. Install with fiberglass tape at gypsum board requiring it as herein specified and required by mfgr.

B. Sheet arrangement layout: Conform to layouts and requirements indicated; use long sheets to restrict joints to minimum.
    1. Edges of sheathing shall not align with the vertical and/or horizontal edges of window and/or door openings.

C. Interior Joints:
    1. Perform work in accordance with gypsum board mfgr's requirements and to meet smooth wall and/or textured wall surface
    2. Perform work in accordance with gypsum board mfgr's requirements and in accordance with wall veneer including, but not limited to;
        a. Tile
        b. Stone
D. Exterior Joints:
    1. General: Gypsum sheathing:
        a. Butt sheets loosely together with tapered edges always placed together. Sand or kerf cut edges and mill ends to provide smooth jointing on exposed face.
            1. Stagger end joints.
    2. Schedule: Dens Glass™ Fireguard® Type X Exterior Sheathing or approved option as herein approved:
        a. General:
            1. Install in accordance with sheathing manufacturers recommendations and as herein specified.
            2. The surface of framing and furring members to receive sheathing should not very more than ¼" from the plane of faces of adjacent members.
                a. Make appropriate modifications and/or coordinate with **General Contractor** to meet out of plane criteria.
            3. End joints, if required, should be offset; joints should fit snugly and flashing installed around all openings.
                a. Except vertical joints at expansion conditions.
            4. Panels of the maximum lengths possible should be used to minimize the number of joints.'
                a. Edge joints must be located parallel to and with vertical orientations on framing.
                b. End joints of adjacent lengths of sheathing must be staggered.
                c. Except at expansion joints.
            5. Wood Framing: Sheathing must be attached to wood framing with nails spaced 4" o.c. at perimeter for racking shear resistance, 8" o.c. at perimeter where racking shear resistance is not required, and 8" o.c. along intermediate framing.
            6. Metal Framing: Sheathing must be attached to metal framing with screws spaced 8" o.c. at perimeter and 8" o.c. along intermediate framing.
            7. Fasteners must be driven so as to bear tight against and flush with surface of sheathing.
                a. Fasteners must NOT be countersunk.
            8. Fasteners must be located a minimum of 3/8" from edges and ends of sheathing panels unless approved otherwise by sheathing mfgr..
            9. Where sheathing is used in applications involving veneer systems, any joint treatment required should be in accordance with sheathing manufacturer's instructions and requirements of local governing authorities.
            10. Where sheathing is used in applications of painted ceilings and soffits, joint tape must be applied over joints and embedded in a specified setting type joint compound.
                a. For smooth finish, the surface should be skim coated with joint compound.
        b. Joint treatment:
            1. Schedule:
                a. Typical: (1/8" – 3/8" maximum width)
                    1. 1st: Apply glass mesh joint tape to all joints, overlapping at intersections by the width of the tape.
                    2. 2nd: Apply approximately a 3/8" bead of caulk along the joint.
                    3. 3rd: Embed the caulk into the entire surface of the tape with a trowel.
                        a. Use backer rod for openings larger than 1/8"
                b. Expansion Joints:
                    1. Hold edges of sheathing 3/8" apart.

2. Install backer rod and sealant at the top of joint 6” long and at the bottom of the joint 6” long to ensure no gaps into wall cavity or joint.
3. Install manufacturer approved primer along length of joint wide enough to extend 2” past the continuous strip of cold applied self adhering membrane applied evenly spaced over joint and edge fasteners.

c. Fastener Treatment
1. Schedule:
a. Typical – except for expansion joints
1. Install manufacturer approved sealant over each fastener head and trowel smooth.
2. Sealant shall be compatible with sheet applied and/or liquid applied vapor barriers and/or water proof membranes.

3. Ceiling Board Exterior gypsum sheathing:
a. Pre-fill joints with Setting-Type Joint compound.
b. Embed Joint Tape in Joint compound.
c. Install Joint compound over zinc, metal trims and beads.
d. Install Joint compound over all fastener heads.
e. Apply finish coats of Setting-Type Joint compound.
f. Skim coat as herein specified for shower ceilings without tile veneer finish.
g. Apply Primer –Sealer prior to texturing.
h. Apply texture
i. Finish paint

E. Typical:
1. Fasteners:
a. Place fasteners 3/8 inch from edges of boards, except when using washers or clips with fasteners in joint.
b. Install fasteners with heads dimpled slightly below surface; do not cut through skin.
c. Space fasteners in accordance with ASTM C840 and manufacturer's recommendations, except as otherwise required by CBC.
d. Install type of fastener and length in accordance with sheathing manufacturer.
e. All ends and edges of all gypsum wallboard shall occur over framing members, except when joints are at right angles to framing members.
2. Ceilings:
a. General:
1. Place boards with long dimension at right angles to supports and end joints occurring over supports.
2. Place perimeters of ceilings and edges of openings over solid bearing members.
b. Maximum joist spacing shall not exceed 12” O.C.
3. Partitions: Place boards with long dimension either vertical or horizontal (but not combination of both) on studs. Stagger joints on opposite sides of partitions. Locate joints at least 12 inches from jambs of openings. Keep end joints to minimum. Fasten double layer gypsum board as required by code, stagger joints in second layer.
4. Caulking: Using double bead of specified material, install at floors, wall intersections, where walls abut other materials and at all electrical boxes. Install wherever caulking materials is indicated in connection with gypsum board. Apply in accordance with manufacturer's printed directions.
5. Cutting and scribing: Cut neatly to fit around outlets, switch boxes and other protrusions, using keyhole saw or specially designed cutting tool for opening of exact shape and size needed.
6. Trim: Edge exterior corners with bead set to true, plumb line. Where gypsum board joins or abuts any material other than gypsum board, cover end of board with metal casing, leaving joint sufficient for installation of caulking (refer to Article 3.03 F above).

F. Reveals

1. The **General Contractor** shall furnish all labor, materials, services and equipment necessary for, and reasonably incidental to the installation of the reveals as indicated on the contract documents and as herein specified.
   a. Reveals shall be installed with full length pieces and butt joints shall only occur at end conditions.
   b. Install with concealed mechanical fasteners.
   c. Install with prefabricated intersections.

G. Finishing
   1. Matrix: Joint treatment and Skim coat treatment:
      a. USG matrix of materials and level of finish
         1. For other products indicated, match that manufacturer's installation recommendations.

		Ready-Mixed Joint Compounds				Drying-Type Joint Compounds				Setting-Type Joint Compounds	
	First Coat	Taping	Topping	All-Purpose	Plus 3	Taping	Topping	All-Purpose	AP Lite	Durabond ®	Easy Sand™
Level 0											
Not Used											
Level 1											
Embedding		■		■	■	■		■	■	■	■
Level 2											
Embedding		■		■	■	■		■	■	■	■
Fill			■	■	■		■	■	■	■	■
Level 3											
Embedding		■		■	■	■		■	■	■	■
Fill			■	■	■		■	■	■	■	■
Primer	■										
Level 4											
Embedding		■		■	■	■		■	■	■	■
Fill			■	■	■		■	■	■	■	■
Finish			■	■	■		■	■	■	■	■
Primer	■										
Level 5											
Embedding		■		■	■	■		■	■	■	■
Fill			■	■	■		■	■	■	■	■
Finish			■	■	■		■	■	■	■	■
Skim/Darby				■	■						
Primer	■										

2. Levels Schedule
   a. **Levels of Finish.** The following levels of finish are established as a guide for specific final decoration and/or Smooth Wall finish and are a minimum standard for each condition.
      1. **Level 0:**
         a. Not Used
      2. **Level 1:**

a. Schedule:
    1. Plenum areas above ceilings, in attics, in areas where the assembly including, but not limited to;
        a. Joints
        b. Fastener heads
        c. Around all wall penetrations
    2. All joints, exterior angles, reveals and interior angles shall have tape embedded in joint compound.
        a. Surface shall be free of excess joint compound.
        b. Tool marks and ridges are acceptable.

3. **Level 2:**
    a. Schedule:
        1. Use where water resistant tile backing board is used as a substrate for tile.
        2. All joints, fasteners, exterior angles, reveals and interior angles shall have fiberglass mesh tape embedded in joint compound and one additional separate coat of joint compound applied over all joints, angles, fastener heads, and accessories. Surface shall be free of excess joint compound. Tool marks and ridges are acceptable.
        3. Primer/Sealer: yes, entire gypsum board surface including treated joints, exterior angles, interior angles, reveals, fasteners, etc. shall be coated with a primer/sealer prior to the application of final finishes.
            a. Gypsum board primer/sealer must be applied as a requirement of this specification section in addition to any and all requirements of primer and paint specified and installed under Section 09 90 00 – Painting and Coatings.

4. **Level 3:**
    a. Schedule:
        1. Use at conditions where a material will be adhesively applied to gypsum board.
            a. Not for use at Tile applications.
        2. Texture: None
        3. Applications: FRP panel substrate
    b. Application:
        1. All joints and angles shall have tape embedded in joint compound and wiped with a joint knife leaving a thin coating of joint compound over all joints and angles.
            a. Joint compound applied over the body of the tape at the time of tape embedment shall be considered a separate coat of joint compound and shall satisfy the conditions of this level.
        2. All fasteners heads and accessories shall be covered with a coat of joint compound and wiped with a joint knife leaving a thin coating of joint compound.
        3. Surface shall be free of excess compound.
        4. Tool marks and ridges are acceptable.
        5. Primer/Sealer: yes, entire gypsum board surface including treated joints, exterior angles, interior angles, reveals, fasteners, etc. shall be coated with a primer/sealer prior to the application of final finishes.
            a. Gypsum board primer/sealer must be applied as a requirement of this specification section in addition to any and all requirements of primer and paint specified and installed under Section 09 90 00 – Painting and coatings.

5. **Level 4:**
    a. Schedule:
        1. Use at all conditions unless noted and/or specified to be Smooth Wall, Level 5 as specified herein, refer to “Level 5 (Smooth Wall) heading and Drawings.
        2. Texture; refer to Heading 2.05 for required texture.
    b. Application:

1. All joints, fasteners, exterior angles, reveals and interior angles shall have tape embedded in joint compound and **three** separate coats of joint compound applied over all joints, fasteners, angles, fastener heads, and accessories. All joint compounds shall be smooth and free of tool marks and ridges. Refer to Heading 2.04 for schedule of specific products.
    a. Taping Compound width schedule:
        1. First coat: 8” wide
        2. Second coat: 10” wide
        3. Third coat: 12” wide
    b. Primer/Sealer: yes, entire gypsum board surface including treated joints, exterior angles, interior angles, reveals, fasteners, etc. shall be coated with a primer/sealer prior to the application of final finishes.
        1. Gypsum board primer/sealer must be applied as a requirement of this specification section in addition to any and all requirements of primer and paint specified and installed under Section 09 90 00 – Painting and Coatings.

c. Limitations:
    1. At un-backed vinyl wall covering apply a Level 5 finish to wall substrate

6. **Level 5: (Smooth Wall / Skim Coat)**
    a. Schedule:
        1. Use this level of finish at:
            a. All locations herein listed (walls, ceilings and soffits)
            b. All locations with G.P. Dens Armour Plus sheathing
            c. All locations herein listed as indicated in drawings, including but not limited to;
                1. Curved Walls
                2. Shower Ceilings without tile veneer
                3. Conference rooms
                4. Lobbies
                5. Corridors.
                6. Shower ceilings without tile veneer
                7. All Barrel vaulted ceilings
                8. Other locations indicated on Drawings
                9. Locations herein specified
            d. All High gloss painted surfaces
    b. Application:
        1. All joints, fasteners, exterior angles, reveals and interior angles shall be embedded in joint compound and three separate coats of specified compound applied over these conditions and one final “Skim Coat” of specified compound trowel applied over entire surface of gypsum board.
            a. Taping Compound width schedule:
                1. First coat: 8” wide
                2. Second coat: 10” wide
                3. Third coat: 12” wide
                4. Fourth: 12” wide to both sides of “Third coat”
                5. Skim coat: Entire surface of board.
            b. The thin “Skim Coat” of specified compound shall be applied to the entire gypsum board surface after the three separate applications of tapping compound have been installed at all joints, fasteners, exterior angles, reveals and interior angles.
                1. Sand only taped joints prior to application of thin skim coat.
                2. Skim coat shall be applied prior to any sanding of non-taped board surface
            c. Skim coat must be applied with a “Darby” steel trowel or knife blade.

1. Install mud to thickness as required to fill imperfections in surface using "Darby" method to fill surface up to ¼" in thickness.
2. Use a minimum 4'-0" wide blade.

d. The surface shall be smooth and free of tool marks and ridges.

2. Primer/Sealer: yes, entire gypsum board surface including treated joints, exterior angles, interior angles, reveals, fasteners, etc. shall be coated with a primer/sealer prior to the application of final finishes.
   a. Gypsum board primer/sealer must be applied as a requirement of this specification section in addition to any and all requirements of primer and paint specified and installed under Section 09 90 00 – Painting and Coatings.

3.06 PROTECTION AND CLEAN UP

A. Refer to Division 1 for protection and cleaning requirements.
B. Subcontractor will keep the work areas in a clean and safe condition so his rubbish, waste, and debris do not interfere with the work of others.
C. Protect work and materials of this Section prior to and during installation, and protect the installed work and materials of other trades.
   1. Clean adjacent surfaces free of caulking or sealant with mechanical action or solvent as necessary, avoiding damage to other materials.
D. Perform work in accordance with manufacturer's recommendations, as herein specified and in accordance with drawings.
E. In the event of damage, immediately make all repairs and replacements necessary to the approval of the **Architect** and at no cost to the **Owner**.
F. After completion of work in this section, remove all erection equipment and implements of service, and debris.
   1. Leave entire area in a neat, clean, acceptable condition.
G. Provide Guarantee/Warranties and Bonds as required in this specification section and as listed in Division 1 closeout submittal procedures.
H. Provide record drawings in accordance with Division 1 closeout submittal procedures.
I. Close out, on-site inspection will be at the discretion of the **Architect** after he receives the **General Contractor's NOTICE** of "Certificate of Substantial Completion".

END SECTION

109 90 00 - PAINTING AND COATINGS

PART 1 - GENERAL

1.01 PRINCIPAL WORK IN THIS SECTION

A. The requirements of the **Owner's** General and Supplementary Conditions, Division 0, and Division 1 requirements apply to the work of this Section.
B. Coordinate the work of this Section with related trades.
C. Verify applicable extents of work at the jobsite.
D. Furnish materials and perform labor required to execute this work as indicated on the drawings, as specified herein and as necessary to complete the work required by project conditions, including but not limited to:
   1. Surface preparation, priming and coats of paint specified are in addition to shop priming and surface treatment specified under other Sections of Work.
   2. Painting in any room in which finishing work is performed, including painting new surfaces as specified and repainting all existing painted surfaces one coat same as last coat specified for similar new work.
   3. Painting of all exposed and semi-exposed surfaces.
   4. Painting of all surfaces indicated in Drawings, and as herein specified.
   5. Painting the primer for wall finish (in addition to and) after Drywall primer/sealer is installed per Section 09 29 00.
   6. Work includes sandblasting of all interior and exterior steel to be painted, refer to Section 04 01 80.

1.02 REFERENCE STANDARDS

A. 2022 California Code of Regulations (CCR), Title 24, California Building Standards Commission (CBSC) www.bsc.ca.gov current edition at time of permit issuance.
B. (CCR) Title 24, (CBSC) Chapter 11 – California Green Building Standards Code
   1. Non-residential new construction
      a. All occupancy types
C. ATBCB ADAAG - Americans with Disabilities Act Accessibility Guidelines, current version.
   1. ASTM D523 Standard Test Method for Specular Gloss
D. Gypsum Association (GA)
   1. GA-232 Painting New Gypsum Board
E. National Fire Protection Agency (NFPA), www.nfpa.org
   1. NFPA 703 - Standard for Fire-Retardant Treated Wood and Fire-Retardant Coatings for Building Materials
F. The Society for Protective Coatings (SSPC), www.sspc.org

1.03 PERFORMANCE, TESTING AND INSPECTION

A. **General:**
   1. Comply with manufacturer's standards.
   2. Comply with Building Code.
   3. Job site inspections shall be done as herein specified and as listed in drawings.

B. **Standards:**

Item	Name of Test	Performance	Testing Std.
Interior Applied Paints	V.O.C.	Comply with California Criteria and as herein required when more restrictive.	California Air Resources Board (CARB) or local AHJ whichever is more stringent
			South Coast Air Quality Management

			District Rule 1113
Refer to drawings and as herein specified			

C. **Sustainability:**
   1. Refer to Division 1 sustainability requirements.
   2. Refer to product criteria identified herein.

1.04 SUBMITTALS AND MOCKUPS

A. Refer to Division 1 for substitution, deviation and/or submittal procedures.
B. Refer to Division 1 for sustainability requirements
C. Submittals:
   1. Product & Technical Data
   2. MSDS Sheets
   3. Manufacturer Installation Instructions
D. Samples:
   1. Brush Outs:
      a. On 8 x 12 inch heavy cardstock paper, provide four (4) samples of each color, paint type and sheen.
      b. Samples shall be labeled with paint designation number as indicated in drawings and paint type as herein indicated.
      c. Resubmit each sample as requested until acceptable sheen and color is achieved.
   2. Physical Samples of Wood Stain / Penetrating Finish:
      a. Three (3) 2'-0" long sections of each type and species of wood substrate with proposed Stain and Finish Coat, and/or Oil Based Penetrating finish for review and approval prior to field application.
D. Mock-Ups:
   1. Erect at location approved by **Architect**.
      a. Size:
         1. Exposed Steel: 4'-0" long section
         2. Gypsum Board: 4'-0" square
      b. Mock-up shall not be part of final construction once approved by **Architect**.
      c. Mock-up shall comprise of all components and finishes as specified and indicated in Drawings.
E. O&M Manuals
   1. As part of O&M (Operation and Maintenance) manual submittals per Division 1 requirements, provide the following:
      a. Two (2) copies of coating maintenance manual, equivalent to Sherwin Williams' "CUSTODIAN"; maintenance manual shall include the following:
         1. Location of manufacturer's paint store closest to the project site
         2. Area summary with finish schedule
         3. Area detail designating where each product, color and finish was used
         4. Product Data Sheets and MSDS sheets for each product used
         5. Color formulations for each color used
         6. Cleaning instructions
         7. Touch up procedures
         8. Color samples of each color and finish used

1.05 QUALITY ASSURANCE

A. Refer to Division 1 for quality control requirements.
B. Contractor / Installer shall have been in business for **five (5)** years providing/installing/finishing similar size projects and complexity.
C. Manufacturer shall have been in business for **ten (10)** years providing similar size projects and complexity.
D. Material with lead times in question or confirmed to be in conflict with meeting the schedule and sequence of construction must be documented at time of bid.
E. Stipulations:

1. Steel preparation shall comply with SSPC (Steel Structures Painting Council) guidelines and as herein required when more stringent.
2. Provide finish coats which are compatible with prime paints used.
   a. Review other Sections of these Specifications in which prime paints are to be provided to ensure compatibility of total coatings system for various substrates.
3. Number of coats specified herein are minimum; uniform coverage, free from defects or blemishes is required.

F. Pre-Installation Conference: A pre-installation conference shall be held prior to commencement of field operations to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work. **General Contractor** shall request meeting **5 days** in advance of construction.
Agenda for meeting shall include, but not be limited to;
1. Substrate preparation
2. Colors

G. Manufacturer's Representative: Make arrangements necessary to have a trained employee of the manufacturer on-site periodically during installation work to review installation procedures.
1. Manufacturer's representative shall review and certify in writing all phases of construction to verify the complete work meets specification requirements.
2. Written certification of all phases of construction shall be sent to the **Architect** by the manufacturer's representative.

H. Miscellaneous criteria:
1. Upon request from other subcontractors, furnish information on characteristics of finish materials proposed for use, to ensure that compatible prime coats are used.
   a. Provide barrier coats over incompatible primers or remove and re-prime as required.
   b. Notify **Architect** in writing of any anticipated problems using coating systems as specified with substrates primed by others.

1.06 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Refer to Division 1 for product delivery, storage and handling requirements.
B. Deliver all materials to job site in original, new and unopened packages and containers bearing manufacturer's name and label, and the following information, including but not limited to:
1. Product Information:
   a. Paint type
   b. Manufacturer's name, stock number and date of manufacture
   c. Contents by volume, for major pigment and vehicle constituents (VOC)
   d. Thinning instructions
   e. Application instructions
   f. Manufacturer's color name and number
2. Designation Information:
   a. Project paint designation, ie: "P1", "P2", "P3", etc.
   b. Sheen type

1.07 JOB CONDITIONS

A. Field-verify that all components, backing, substrates, etc. provided by others are installed correctly before proceeding with installation of products as herein specified.
B. Apply water-based paints only when temperature of surfaces to be painted and surrounding air temperatures are between 55ºF and 90ºF unless otherwise permitted by paint manufacturer's printed instructions.
C. Apply VOC compliant solvent-thinned paints only when temperature of surfaces to be painted and surrounding air temperatures are between 45ºF and 95ºF, unless otherwise permitted by paint manufacturer's printed instructions.
D. Do not apply primers, paint and/or stain in rain, fog, and/or mist, when relative humidity exceeds 85%, or to damp or wet surfaces, unless otherwise permitted by paint manufacturer's printed instructions.
E. Painting may be continued during inclement weather only if areas and surfaces to be painted are enclosed and heated within temperature limits specified by paint manufacturer during application and drying periods.

1.08 PROTECTION

A. Protect finish surfaces at all times from surfaces and material adjacent to them.
B. Finish work defaced with other materials on surface shall be replaced.
C. Protect work under this section from damage by other trades.

1.09 GUARANTEE / WARRANTY

A. Refer to Division 1 for closeout submittal procedures.
B. Furnish initial **one (1)** year written warranty signed by manufacturer and installer agreeing to repair and/or replace work which has failed as a result of defects in materials or workmanship.
   1. Upon notification of **Owner** within the warranty period, such defects shall be repaired and replaced at no cost to the **Owner**.
C. Furnish manufacturer's additional **five (5)** year warranty agreeing to repair and/or replace paint which has failed as a result of defects in materials or workmanship including fading, chipping, rust bleed thru, cracking and chalking.
   1. Upon notification of **Owner** within the warranty period, such defects shall be repaired and replaced at no cost to the **Owner.**

1.10 RELATED WORK/SECTIONS

A. Related work includes, but is not limited to the following:
   1. Wall substrates
   2. Floor substrates
   3. Component substrates
   4. Metal substrates
   5. Railings and Assemblies
   6. Stairs
   7. Coordinate with surfaces which might be finished by and/or shop painted, including but not limited to:
      a. Texturing of gypsum board
      b. Interior Flashing
      c. Railings – Prefinished
B. Related Sections include, but are not limited to the following:
   1. Division 1
   2. Section 09 29 00 – Gypsum Board & Sheathing Substrates

1.11 OPERATION AND MAINTENANCE DATA

A. Submit as part of project closeout:
   1. Complete instructions regarding maintenance of the materials, finishes, etc.
   2. Refer to Division 1 for closeout submittal procedures.

1.12 SEQUENCING AND SCHEDULING

A. Schedule work and sequence with **General Contractor**.
B. Schedule required cleaning of substrates prior to the installation of materials, components, etc.

1.13 EXTRA MATERIAL

A. Submit as part of project closeout:
   1. Provide Three (3) 1-gallon containers of extra material in each finish paint type, color, sheet, etc. and in same lot as installed product.
      a. Provide in factory packaged and labeled containers; identify containers with project name, manufacturer's paint system, color name and number, and paint sheen as indicated in documents and in accordance with specifications.
      b. Do not supply anything less the full containers.
      c. For paint that is available only in 5-gallon containers provide one (1) 5-gallon container.
      a. Deliver materials to project premises just prior to substantial completion, and store at location directed by the **Owner**.

**1.14 PAINTING EXCLUSIONS AND CLARIFICATIONS **

A. Following categories of work are not included as part of field-applied finish work, or are included in other Sections of these Specifications:
   1. Shop priming: Unless otherwise specified, initial shop priming of metal items is included under various Sections for structural steel, miscellaneous metal items, hollow metal work, and similar items, and for such fabricated components, wood casework, and shop-fabricated or factory-built mechanical and electrical equipment or accessories.
      a. This shop priming shall not replace the final priming required as herein specified.
      b. Shop priming shall be compatible with priming and painting as herein specified.
      c. Steel which will be welded in the field shall be primed and painted after erection and shop priming material shall be compatible with painting products as herein specified.
   2. Pre-finished items: Unless otherwise indicated, do not include painting when factory-finishing or installer-finishing is specified for such items as (but not limited to) toilet partitions, finish hardware, plastic laminate casework, exterior insulation system, carpeting, ceramic tile, louver blinds, knock-down steel or aluminum drywall frames, finished electrical equipment including light fixtures, and finished mechanical equipment.
   3. Concealed surfaces: Unless otherwise indicated, painting is not required on wall or ceiling surfaces in concealed areas and generally inaccessible areas, such as foundation spaces, furred areas, pipe spaces and duct shafts.
      a. Mechanical and Electrical rooms are to be painted.
      b. Back side of all casework shall be painted.
   4. Finished metal surfaces: Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze and similar finished materials will not require finish painting, unless otherwise indicated.
   5. Operating parts and labels: Moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sensing devices, motor and fan shafts will not require finish painting unless otherwise indicated.
      a. Do not paint over any code-required labels, such as Underwriter's Laboratories and Factory Mutual, or any equipment identification, performance rating, name, or nomenclature plates.

B. “Paint" as used herein means all coating systems materials, which includes primers, emulsions, enamels, stain, sealers and fillers, and other applied materials whether used as prime, intermediate or finish coats.

C. Paint all exposed surfaces whether or not colors are designated in any "schedule", except where natural finish of material is specifically noted as surface not to be painted.
   1. Where items or surfaces are not specifically mentioned, use paint systems of adjacent similar materials in color/finish selected by **Architect**.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Single source responsibility, specified items shall be from one manufacturer for each paint type.

B. Acceptable manufacturers shall be one of the following, as herein listed and in Drawings:
   1. General Paint:
      a. Sherwin Williams, www.sherwinwilliams.com
      b. Dunn Edwards, www.dunnedwards.com
      c. Benjamin Moore, www.benjaminmoore.com
   2. Specialty Touch-up paint for galvanized framing
      a. ZRC Worldwide, www.zrcworldwide.com
   3. Elastomeric Paint
      a. Sherwin Williams, www.sherwinwilliams.com
   4. Exterior Wood – Penetrating Oil Based Finish:
      a. Flood, www.flood.com
   5. Interior Fire Retardant wood paint
      a. Flame Control Coatings, LLC www.flamecontrol.com
   6. Anti-Slip paint / coating
      a. Wooster Products, www.wooster-products.com
   7. Reviewed Equivalent by **Architect.**

a. Substitutions and deviations shall require **Architect's** approval and shall be given in letterform.
b. Refer to Division 1 for substitution, deviation and/or submittal procedures.
c. Proposed alternate products must be equal in terms of chemical composition, color, finish, configuration, performance standards, etc.

C. All products and materials indicated shall be installed according to current listed specification requirements and manufacturers specifications/recommendations.
D. Refer to drawings, details, and other related specification section whether listed or not.
A. **General:**
1. Application: Typical for specified type/substrate unless otherwise noted.

2.02 PRODUCT SCHEDULE - INTERIOR SURFACES

A. **Interior Concrete (Painted)**
1. Substrates:
a. Tilt-Up Concrete Construction
b. Pre-Cast Concrete
c. Cast-in-Place Concrete
d. Cementitious Siding, Paneling and Trim
2. Application: Typical, u.o.n.
3. Product Schedule:

	Application				Manufacturer's Product		
	Product Type	**Sheen**	**Dry Film Thickness (mil)**	**VOC Limit (g/L)**	**Sherwin Williams**	**Alternate: Dunn Edwards**	**Alternate: Benjamin Moore**
1st Coat	Primer	-	5.3-8.0 wet 2.1-3.2 dry	<50	Loxon Concrete & Masonry Primer LX02 Series	EFF-STOP Select ESSL00	Ultra Spec Acrylic High Build Masonry Primer #609
2nd & 3rd Coats	Finish	Eg-Shel	4.0 wet 1.4-1.7 dry (depending on sheen)	<50	ProMar 200 Zero VOC Interior Latex B20 Series (Eg-Shel)	SPARTA Series SWLL30 (Egg Shell)	Ultra Spec 500 Zero VOC Interior Latex #538 (Eggshell)

B. **Interior Masonry (Painted)**
1. Substrates:
a. Concrete Masonry Units (CMU)
2. Application: Typical, u.o.n.
3. Product Schedule:

	Application				Manufacturer's Product		
	Product Type	**Sheen**	**Dry Film Thickness (mil)**	**VOC Limit (g/L)**	**Sherwin Williams**	**Alternate: Dunn Edwards**	**Alternate: Benjamin Moore**
1st Coat	Primer	-	5.3-8.0 wet 2.1-3.2 dry	<50	PrepRite Block Filler B25 Series Or	Smooth BLOC-FIL Select SBSL00	Ultra Spec Hi-Build Block Filler #571

					ConFlex Block Filler CF01 Series		
2nd & 3rd Coats	Finish	Eg-Shel Gloss Semi-Gloss Low-Gloss Eg-Shel Low Sheen Eg-Shel Flat	4.0 wet 1.4-1.7 dry (depending on sheen)	<50	ProMar 200 Zero VOC Interior Latex B20 Series (Eg-Shel) B21 Series (Gloss) B31 Series (Semi-Gloss) B41 Series (Low Gloss Eg-Shel) B24 Series (Low Sheen Eg-Shel) B30 Series (Flat)	SPARTA Series SWLL30 (Egg Shell) SZRO10 (Flat) SWLL40 (Low Sheen) SWLL50 (Semi-Gloss) SSHL60 (Gloss)	Ultra Spec 500 Zero VOC Interior Latex #538 (Eggshell) #540 (Gloss) #539 (Semi-Gloss) #537 (Low Sheen) #536 (Flat)

C. **Interior Galvanized Handrail and Guardrail Assemblies**
1. Substrates: Galvanized metal handrail & guardrail assemblies
2. Application: Typical @ galvanized handrail and guardrail assemblies
3. Product Schedule:

	Application				**Manufacturer's Product**		
	Product Type	**Sheen**	**Dry Film Thickness (mil)**	**VOC Limit (g/L)**	**Sherwin Williams**	**Alternate: Dunn Edwards**	**Alternate: Benjamin Moore**
1st Coat	Primer	Semi-Gloss	7.0-13.5 wet 5.0-10.0 dry	<100 (un-reduced)	Macropoxy 646-100 Fast Cure Epoxy	US Coatings EpoxyGrip 2300	Corotech 100% Solids Epoxy Pre Primer #V155
2nd Coat	Finish	Semi-Gloss (Part A)	3.6-4.8 wet 3.0-4.0 dry	<100	Hi-Solids Polyurethane B65 Series	US Coatings UreGrip 3000 HS VOC	Corotech Aliphatic Acrylic Urethane #V500
3rd Coat	Finish	Semi-Gloss (Part A)	3.6-4.8 wet 3.0-4.0 dry	<100	Hi-Solids Polyurethane B65 Series	US Coatings EpoxyGrip 2300	Corotech Aliphatic Acrylic Urethane #V500
Hardener	Finish	Gloss (Part B)	3.6-4.8 wet 3.0-4.0 dry	<100	Hi-Solids Polyurethane Hardener	US Coatings	Corotech Aliphatic

					B65 Series	UreGrip 3000 HS VOC	Urethane V500 Catalyst

D. **Interior DryFall Systems**
1. Substrates: Galvanized and non-galvanized metal
2. Application: Interior face of exposed metal roof deck, typical u.o.n.
3. Exceptions:
   a. Do not use Dryfall Systems when temperature and humidity do not meet criteria set forth in manufacturer's product data / installation instructions.
4. Product Schedule:

	Application				Manufacturer's Product		
	Product Type	**Sheen**	**Dry Film Thickness (mil)**	**VOC Limit (g/L)**	**Sherwin Williams**	**Alternate: Dunn Edwards**	**Alternate: Benjamin Moore**
1st Coat	Primer	-	5.0-10.0 wet 1.9-3.8 dry	<50	Pro-Industrial Pro-Cryl Universal Acrylic Primer B66 Series	N/A	Ultra Spec HP Acrylic Metal Primer #HP04
2nd & 3rd Coats	Finish	Semi-Gloss Flat Eg-Shel	6.0-9.0 wet 2.0-3.0 dry	<50	Pro-Industrial Waterborne Acrylic DryFall B42 Series	AQUAFALL Dry Fall AQUA10 AQUA 30	Latex Dryfall #397 Semi-Gloss #395 Flat #396 Eggshell

E. **Gypsum Board Walls and Ceilings**
1. Substrates: Gypsum Board substrates per Section 09 29 00 – Gypsum Board & Sheathing Substrates.
2. Application: Typical, u.o.n.
3. Product Schedule:

	Application				Manufacturer's Product		
	Product Type	**Sheen**	**Dry Film Thickness (mil)**	**VOC Limit (g/L)**	**Sherwin Williams**	**Alternate: Dunn Edwards**	**Alternate: Benjamin Moore**
1st Coat	Primer	-	4.0 wet 1.0 dry	<50	ProMar 200 Zero VOC Latex Primer B28 Series	VINYLAST IC Select VNSL00	Ultra Spec 500 Latex Primer #534
2nd & 3rd Coats	Finish	Eg-Shel Gloss Semi-Gloss	4.0 wet 1.4-1.7 dry (depending on sheen)	<50	ProMar 200 Zero VOC Interior Latex B20 Series (Eg-Shel)	SPARTA Series SSLL30 (Egg Shell)	Ultra Spec 500 Zero VOC Interior Latex

		Low-Gloss Eg-Shel Low Sheen Eg-Shel Flat **Or** Refer to Interior Finish Legend			B21 Series (Gloss) B31 Series (Semi-Gloss) B41 Series (Low Gloss Eg-Shel) B24 Series (Low Sheen Eg-Shel) B30 Series (Flat)	SZRO10 (Flat) SSLL20 (Velvet) SWLL40 (Low Sheen) SWLL50 (Semi-Gloss) SSHL60 (Gloss)	#538 (Eggshell) #536 (Flat) #537 (Low Sheen) #539 (Semi-Gloss) #540 (Gloss)

F. **Gypsum Board Walls & Ceilings @ Showers, Locker Rooms, and other High-Humidity Rooms**
1. Substrates: Gypsum Board substrates per Section 09 29 00 – Gypsum Board & Sheathing Substrates.
2. Application: Typical, u.o.n.
3. Product Schedule:

	Application				Manufacturer's Product		
	Product Type	**Sheen**	**Dry Film Thickness (mil)**	**VOC Limit (g/L)**	**Sherwin Williams**	**Alternate: Dunn Edwards**	**Alternate: Benjamin Moore**
1st Coat	Primer	-	4.0 wet 1.0 dry	<50	ProMar 200 Zero VOC Latex Primer B28 Series	VINYLASTIC Select VNSL00	Ultra Spec 500 Latex Primer #534
2nd & 3rd Coats	Finish	Refer to Interior Finish Legend	5.0-12.0 wet 2.0-5.0 dry	<50	Pro-Industrial Water Based Catalyzed Epoxy Part A B73 Series	US Coatings AquaGrip 2600	Corotech Pre Catalyzed Waterborne Epoxy V341
4TH Coat	Hardener		5.0-12.0 wet 2.0-5.0 dry	<50	Pro-Industrial Water Based Catalyzed Epoxy Part B B73 Series	US Coatings AquaGrip 2600	Single component

G. **Gypsum Board Walls & Ceilings @ Utility Rooms (Janitor, Storage, Electrical, Equipment, IDF/MDF, and Mechanical Rooms and Kitchens)**
1. Substrates: Gypsum Board substrates per Section 09 29 00 – Gypsum Board & Sheathing Substrates.
2. Application: Typical, u.o.n.
3. Product Schedule:

	Application				Manufacturer's Product		
	Product Type	**Sheen**	**Dry Film Thickness (mil)**	**VOC Limit (g/L)**	**Sherwin Williams**	**Alternate: Dunn Edwards**	**Alternate: Benjamin Moore**
1st Coat	Primer	-	4.0 wet 1.0 dry	<50	ProMar 200 Zero VOC Latex Primer B28 Series	VINYLASTIC Select VNSL00	Ultra Spec 500 Latex Primer #534
2nd & 3rd Coats	Finish	Refer to Interior Finish Legend	5.0-12.0 wet 2.0-5.0 dry	<50	Pro-Industrial Water Based Catalyzed Epoxy Part A B73 Series	US Coatings AquaGrip 2600	Corotech Pre Catalyzed Waterborne Epoxy V341
4TH Coat	Hardener		5.0-12.0 wet 2.0-5.0 dry	<50	Pro-Industrial Water Based Catalyzed Epoxy Part B B73 Series	US Coatings AquaGrip 2600	Single component

H. **Interior Wood (Painted)**

1. Substrates: Interior wood including, but not limited to Glu-Lam and Sawn Timber beams, columns, and diagonal members, wood decking and sheathing, trim, and back of casework.
2. Application: Typical, u.o.n.
3. Product Schedule:

	Application				Manufacturer's Product		
	Product Type	**Sheen**	**Dry Film Thickness (mil)**	**VOC Limit (g/L)**	**Sherwin Williams**	**Alternate: Dunn Edwards**	**Alternate: Benjamin Moore**
1st Coat	Primer	-	4.0 wet 1.4 dry	<50	Premium Wall & Wood Latex Primer B28 Series	Interkote IKPR00	Fresh Start All Purpose Primer #046
2nd & 3rd Coats	Finish	Eg-Shel Gloss Semi-Gloss Low-Gloss Eg-Shel Low Sheen Eg-Shel Flat **Or** Refer to Interior Finish Legend	4.0 wet 1.4-1.7 dry (depending on sheen)	<50	ProMar 200 Zero VOC Interior Latex B20 Series (Eg-Shel) B21 Series (Gloss) B31 Series (Semi-Gloss) B41 Series (Low Gloss Eg-Shel) B24 Series (Low Sheen Eg-Shel)	SPARTA Series SSLL30 (Egg Shell) SZRO10 (Flat) SSLL20 (Velvet) SWLL40 (Low Sheen) SWLL50 (Semi-Gloss) SSHL60 (Gloss)	Ultra Spec 500 Zero VOC Interior Latex #538 (Eggshell) #540 (Gloss) #539 (Semi-Gloss) #537 (Low Sheen) #536 (Flat)

I. **Interior Wood (Painted Flame Retardant)**
1. Substrates: Interior backer boards, panel boards, and other locations noted in drawings.
2. Application: Typical, u.o.n.
3. Product Schedule:

	Application				Manufacturer's Product
	Product Type	**Sheen**	**Dry Film Thickness (mil)**	**VOC Limit (g/L)**	**Flame Control Coatings, LLC**
1st Coat	Sealer	-	-	-	Not required
2nd Coat	Finish	Flat	7.6 wet 3.9 dry	45 g/L	Flame Control No. 20-20A Intumescent Fire Retardant (Waterbased) Paint

J. **Interior Wood – Stained**
1. Substrates: Exposed exterior natural wood surfaces including, but not limited to Glu-Lam and Sawn Timber beams, columns, and diagonal members, and interior trim / finish carpentry.
   a. Not for use on wood floors.
2. Application: Typical, u.o.n.
3. Product Schedule:

	Application				Manufacturer's Product		
	Product Type	**Sheen**	**Dry Film Thickness (mil)**	**VOC Limit (g/L)**	**Sherwin Williams**	**Alternate: Dunn Edwards**	**Alternate: Benjamin Moore**
1st Coat	Conditioner	-	-	<100	MinWax Waterbased Pre-Stain Wood Conditioner	N/A	Lenmar Interior Waterborne Wiping Stain #1WB.1300 UNTINTED
2nd Coat*	Stain	-	-	<250	MinWax Performance Series Tintable Wood Stain 250 VOC	GEMINI Craftsman Collection 240 VOC Wiping Stain	Lenmar Interior Waterborne Wiping Stain #1WB.1300
3rd & 4th Coats	Clear Topcoat	Satin Gloss Semi-Gloss		<275	MinWax Water Based Oil-Modified Polyurethane	GEMININ TITANIUM High Solids Urethane Modified Waterborne WB-02X0	Benwood Stays Clear Acrylic Polyurethane Flat #425 Low Lustre #423 High Gloss #422

*=Additional Coats may be necessary to achieve desired color.

K. **Interior Wood Floor – Stained and/or Clear Coated**
1. Substrates: Exposed interior natural wood floor surface.

2. Application: Dance floors, typical, u.o.n.
3. Product Schedule:

	Application				Manufacturer's Product		
	Product Type	**Sheen**	**Dry Film Thickness (mil)**	**VOC Limit (g/L)**	**Sherwin Williams**	**Alternate: Dunn Edwards**	**Alternate: Benjamin Moore**
1st Coat	Conditioner	-	-	<100	MinWax Waterbased Pre-Stain Wood Conditioner	N/A	Lenmar Interior Waterborne Wiping Stain #1WB.1300
2nd Coat*	Stain	-	-	<250	MinWax Performance Series Tintable Wood Stain 250 VOC	GEMINI Craftsman Collection 240 VOC Wiping Stain	Lenmar Interior Waterborne Wiping Stain #1WB.1300
3rd & 4th Coats	Clear Topcoat	Satin Semi-Gloss Gloss		<275	MinWax Water Based Oil-Modified Polyurethane	GEMININ TITANIUM High Solids Urethane Modified Waterborne WB-02X0	Benwood Stays Clear Acrylic Polyurethane Flat #425 Low Lustre #423 High Gloss #422

*=Additional Coats may be necessary to achieve desired color.

L. **Interior Wood – Penetrating Oil Based Finish (Transparent)**
1. Substrates: Exposed interior natural wood surfaces when noted to match penetrating oil based finish @ exterior wood.
2. Application: Typical, u.o.n.
3. Product Schedule:

	Application				Manufacturer's Product
	Product Type	**Sheen**	**Dry Film Thickness (mil)**	**VOC Limit (g/L)**	**FLOOD**
1st Coat	Cleaner	-	-	-	Per manufacturer for substrate condition
2nd & 3rd Coats	Finish	-	-	<350	CWF UV-5 Oil

M. **Interior Pipe Identification**
1. Substrates: Metal Piping
2. Application: Typical where pipes are not specified to receive insulated pipe wraps, u.o.n.; coordinate with Mechanical drawings and specifications.
3. Product Schedule:

	Application				Manufacturer's Product		
	Product Type	**Sheen**	**Dry Film Thickness**	**VOC Limit**	**Sherwin Williams**	**Alternate:**	**Alternate:**

			(mil)	(g/L)		Dunn Edwards	Benjamin Moore
1st Coat	Primer	-	4.0 wet 1.0 dry	<50	Pro-Industrial Pro-Cryl Universal Acrylic Primer B66 Series	ENDURA-PRIME Metal Primer ENPR00	Ultra Spec HP Acrylic Metal Primer #HP04
2nd & 3rd Coats	Finish	Gloss	4.0-5.0 wet 1.4-1.7 dry	<50	Pro-Industrial Waterbased Alkyd Urethane B53 Series	ENDURA-COAT ENCT60	Ultra Spec HP D.T.M. Gloss HP28

N. **Interior TRAFFIC MARKING**
1. Substrate:
   a. Concrete
   b. Asphalt
   c. Brick
2. Specified in "Pavement Markings Section 32 17 23"

VOCs: Compliant with current SCAQMD

O. **Interior GALVANIZED REPAIR PAINT**: (Coordinate with Specifications containing galvanized metal)
1. Mfgr: ZRC Worldwide, www.zrcworldwide.com, 800.831-3275
2. Product: ZRC ZERO VOC Water-Based Galvanizing Compound
3. Type: Two-pack Water-Based Galvanizing Compound
4. Standards: (Meets or exceeds)
   a. ISO 9001 registered
   b. MIL-P-26915A (USAF Zinc dust Primer)
   c. SSPC-Paint 20 (Specification for Zinc Rich Primer)
   d. ASTM Des. A239 Preece Test for hot dipping galvanizing
   e. ASTM Des B117 10,000 salt spray without failure
   f. VOCs: Compliant with current SCAQMD and LEED v4 VOC requirements
5. Material:
   a. 93% Zinc in the dry film using Type III "ultra-pure" ASTM-D-520 zinc
6. Preparation:
   a. Grease & Oils: Solvent clean to SSPC-SP1
   b. Rust Scale: Power tool clean to SSPC-SP3 or SSPC-SP11 (SIS St. 2 or 3)
      1. Sand blast (SSPC-SP6) at exterior exposed conditions.
   c. Mill Scale: Sandblast to SSPC-SP6
   d. Water Immersion: (100 degree F max.) Sandblast to SSPC-SP10 (near-white)

2.03 OTHER MATERIALS

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

PART 3 - EXECUTION

3.01 INSPECTION/EXAMINATION

A. Applicator must examine areas and conditions under which painting work is to be performed and notify **General Contractor** in writing of conditions detrimental to proper and timely completion of work.
1. Examine and verify that receiving conditions of substrate have no defects or errors, which would result in poor or potentially defective application or cause latent defects in workmanship.
2. Confirm water vapor emission of concrete surfaces to be painted do not exceed manufacturer's recommendations.

3. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of durable paint film
4. Do not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to applicator.

3.02 COORDINATION

A. Refer to Division 1 for project coordination requirements.
B. **General Contractor** shall coordinate work as herein specified, in accordance with drawings and as required to complete scope of work with all related trades.

3.03 PREPARATION

A. Prepare work, substrates, etc. in accordance with manufacturer's recommendations.
   1. General:
      a. Perform all preparation and cleaning procedures in strict accordance with paint/stain manufacturer's instructions and as herein specified, for each particular substrate condition.
      b. Remove all hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish painted, or provide surface-applied protection prior to surface preparation and painting operations. Remove if necessary, for complete painting of items and adjacent surfaces. Following completion of painting of each space or area, reinstall removed items by workmen skilled in trades involved.
      c. Clean surfaces to be painted before applying material.
         1. Remove oil and grease with clean cloths and cleaning solvents prior to mechanical cleaning. Program cleaning and painting so that dust and other contaminants from cleaning process will not fall in wet, newly painted surfaces.
         2. Shot blast all area's to remove rust and other contaminants in accordance with SSPC guidelines.
   2. Wood:
      a. Clean wood surfaces to be painted of dirt, oil, or other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sandpaper smooth those finished surfaces exposed to view, and dust off.
      b. Prime, stain, or seal wood required to be job painted immediately upon delivery to job. Prime edges, ends, faces, undersides, and backsides of such wood, including cabinets, counters, cases, etc; interior and exterior trim, fascia, wood doors and plywood.
      c. When transparent finish is required, use spar varnish for backpriming.
      d. Seal tops, bottoms and cut-outs and all edges not covered with veneer of wood doors with heavy coat of varnish or equivalent sealer immediately upon delivery to job.
      e. Scrape and clean small, dry, seasoned knots and apply thin coat of white shellac or other recommended knot sealer, before application of priming coat.
      f. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood-filler. Sandpaper smooth when dried.
   3. Metal / Steel:
      a. Ferrous metals:
         1. Clean non-galvanized, ferrous surfaces that have not been shop-coated of all oil, grease, dirt, loose mill scale and other foreign substances by solvent or mechanical cleaning, complying with Steel Structures Painting Council (SSPC)-SP3.
         2. Sand blast all non-galvanized, ferrous surfaces that have not been shop-coated of all rust and other foreign substances by mechanical blast cleaning, complying with Steel Structures Painting Council (SSPC)-SP6.
         3. Comply with SSPC guidelines in addition to these instructions.
      b. Galvanized surfaces
         1. Clean free of oil and surface contaminates with acceptable non-petroleum based solvent.
         2. Comply with SSPC guidelines in addition to these instructions.
      c. Metal Decking
         1. Factory Primed:

a. Field fog finish painted for acoustical deck locations, coordinate with metal deck manufacturer.
2. Factory Finish Painted:
a. Field tough up in accordance with this specification and paint in accordance with metal decking Section.
d. Galvanized surfaces
1. Clean free of oil and surface contaminates with acceptable non-petroleum based solvent.
2. Prepare all surfaces to be smooth – fill voids & imperfections to achieve smooth surfaces.
3. Remove all burrs / scratches, etc.
4. Fill all gaps left where welding occurs between two items to achieve a continuous & even joint.
5. Comply with SSPC guidelines in addition to these instructions.
4. Concrete:
a. Clean concrete surfaces to be painted of dirt, oil, or other foreign substances with scrapers, VOC compliant cleaners, and sandpaper, as required.
b. Prime concrete as required by paint manufacturer.
c. Tape the locations for stair tread stripes to install true and straight edges of contrasting stripes.

3.04 INSTALLATION

A. General:
1. Perform work in accordance with manufacturer's recommendations, as herein specified and in accordance with drawings.
2. Apply paint by brush, roller, spray, or other acceptable practice in accordance with manufacturer's directions.
a. Use brushes best suited for type of material being applied. Use rollers of carpet, velvet back, or high pile sheep's wool as recommended by paint manufacturer for material and texture required.
1. Roll apply 1st coat of paint typical at all wall and ceiling applications.
2. Install finish coats with sprayer at all interior and exterior exposed Architectural/structural steel locations.
3. Number of coats and paint film thickness required is same regardless of application method. Do not apply succeeding coats until previous coat has completely dried and inspected. Sand between each enamel or varnish coat application with fine sandpaper or rub surfaces with pumice stone where required to produce even, smooth surface in accordance with manufacturer's directions.
4. Apply additional coats when undercoats, stains, or other conditions show through final coat of paint, until paint film is of uniform finish, color and appearance. Give special attention to insure that all surfaces, including edges, corners, crevices, welds, and exposed fasteners receive film thickness equivalent to that of flat surfaces.
5. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Paint surfaces behind permanently-fixed equipment or furniture with prime coat only.
6. Paint interior surfaces of ducts, where visible through registers or grilles, and other surfaces indicated on Drawings with flat non-specular black paint, before final installation of equipment.
7. Paint back sides of access panels, removable or hinged covers to match exposed surfaces.
8. Finish exterior doors on tops, bottoms, and side edges same as exterior faces, unless otherwise indicated.
9. Painting of mechanical and electrical work is limited to those items exposed in Mechanical Equipment Rooms and in occupied spaces.
10. Doors: Finish tops, bottoms and edges of doors to provide same appearance as balance of door; re-seal all trimmed edges and mortising on factory sealed doors immediately after fitting by the finish carpenter.

11. Provide “Wet Paint” signs as required to protect newly painted finishes. Remove temporary protective wrappings provided by others for protection of their work after completion of painting operations.

B. Mechanical items to be painted include, but are not limited to, following:
   1. Piping, pipe hangers, and supports, when exposed in finished spaces.
   2. Motors, mechanical equipment, and supports.
   3. Accessory items.

C. Electrical items to be painted include, but are not limited to, following:
   1. Conduit and fittings.
   2. Switchgear.

D. Minimum coating thickness: Apply each material at not less than manufacturer's recommended spreading rate, to provide total dry film thickness as indicated.

E. Prime coats: Recoat primed and sealed walls and ceilings where there is evidence of suction spots or unsealed areas in first coat, to assure finish coat with no burn-through or other defects due to insufficient sealing.

F. Scheduling painting: Apply first-coat material to surfaces that have been cleaned, pre-treated, primed and/or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
   1. All materials shall be applied and cut in neatly to ensure uniform drying to the color and sheen specified, free from runs, sags, wrinkles, shiners, streaks and brush marks.
   2. Allow sufficient time between successive coatings to permit proper drying. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat of paint does not cause lifting or loss of adhesion of under coat.
   3. Each coat of paint or finish must be inspected and approved before application of the succeeding specified coat, failure to comply with the inspection and approval requirements for successive coats will necessitate recoating at the painting contractor's expense wherever work is not properly credited. The painting contractor must furnish a report of each coat applied when completed for inspection and approval to comply with the above. Notify the **Architect** in advance of completed coats to be inspected.

G. Pigmented (opaque) finishes: Completely cover to provide opaque, smooth surface of uniform finish, color, appearance, and coverage.
   1. Vary each coat of paint in shade from the preceding coat in a manner which renders each coat readily distinguishable without affecting finish color. Touch up all blemishes.

H. Transparent (clear) finishes: On exposed portions, use multiple coats to produce glass-smooth surface film continuity of even luster. Provide finish free of laps, cloudiness, color irregularity, runs, brush marks, orange peel, nail holes, or other surface imperfections.

I. Brush application: Brush-out and work all brush coats onto surfaces in even film. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable. Neatly draw all glass and color break lines.

J. Mechanical applicators: Use mechanical methods for paint application when permitted by governing ordinances and trade union regulations. If permitted, limit to only those surfaces impracticable for brush applications.
   1. Limit roller application (generally) to interior wall and ceiling finishes for second and third coats. Apply each roller coat to provide equivalent hiding as brush-applied coats.
   2. Where spray application is used, apply each coat to provide equivalent hiding of brush-applied primer. Do not double back with spray equipment for purpose of building up film thickness of two coats in one pass.

3.05 FIELD QUALITY CONTROL

A. Product Manufacturer shall provide field service support as requested by the Installer/Applicator

B. **General Contractor** and the Product Manufacturer shall make periodic on-site inspections to ensure that the materials are being installed in strict accordance with manufacturer’s specifications. The Applicator shall be responsible for the proper application of the materials.

C. The Applicator shall certify in writing the quality of work performed relative to the substrate system, details, installation procedures and workmanship is in accordance with project specifications and manufacturer's instructions.

3.06 PROTECTION AND CLEAN UP

A. Refer to Division 1 for protection and cleaning requirements.
B. Subcontractor will keep the work areas in a clean and safe condition so his rubbish, waste, and debris do not interfere with the work of others.
C. Protect work and materials of this Section prior to and during installation, and protect the installed work and materials of other trades.
    1. Clean adjacent surfaces free of caulking or sealant with mechanical action or solvent as necessary, avoiding damage to other materials.
D. Perform work in accordance with manufacturer's recommendations, as herein specified and in accordance with drawings.
E. In the event of damage, immediately make all repairs and replacements necessary to the approval of the **Architect** and at no cost to the **Owner**.
F. After completion of work in this section, remove all erection equipment and implements of service, and debris.
    1. Leave entire area in a neat, clean, acceptable condition.
G. Provide Guarantee/Warranties and Bonds as required in this specification section and as listed in Division 1 closeout submittal procedures.
H. Provide record drawings in accordance with Division 1 closeout submittal procedures.
I. Close out, on-site inspection will be at the discretion of the **Architect** after he receives the **General Contractor's NOTICE** of "Certificate of Substantial Completion".

END OF SECTION