

PROJECT MANUAL

CREEKSIDE RE-ROOFING ALPINE UNIFIED SCHOOL DISTRICT SAN DIEGO COUNTY OFFICE OF EDUCATION



BID NO 20250312

ISSUED 3/13/24

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SPECIFICATIONS

CREEKSIDE RE-ROOFING 2024

**ALPINE UNIFIED SCHOOL DISTRICT
SAN DIEGO COUNTY OFFICE OF EDUCATION**



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SECTION 01 1100
SUMMARY OF WORK

PART 1 – GENERAL

1.01 SUMMARY

- A. Project: The Project referred to as Creekside Re-Roofing 2024. The Project is located at 8818 Harbison Canyon Rd, Alpine, CA 91901, which is southwest of the intersection of Harbison Canyon Road and Bridle Run, in Alpine, San Diego County, California. The Project is for the San Diego County Office of Education, 6401 Linda Vista Road San Diego, CA 92111.
- B. Description of Work: Replacement of existing roofing at Buildings 300B, 400, 500A, 500B, 500C, 700A, 700B, 700C, 20, 21, 22, 23, 24, and Administrative Building, as indicated in the Contract Documents prepared by MGPA Architecture (MGPA). The buildings are existing Type V Construction..

1.02 WORK SEQUENCE

- A. Work is to be conducted in a single phase based on a single lump-sum Base Bid. The Project will be managed by General Contractor.

1.03 TRADE CONTRACTOR USE OF PREMISES

- A. During the construction period, the Trade Contractors shall have full use of the construction area for construction operations. The Trade Contractors' use of the construction area is limited only by the Owner's right to perform construction operations with its own forces or to employ separate contractors on portions of the project.
- B. Limit use of the premises to construction activities in areas indicated. Confine operations to areas within Contract limits indicated. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.
- C. Keep driveways and entrances serving the premises clear and available to the Owner and the Owner's employees and agents at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for the storage of materials and equipment on site.

1.04 OCCUPANCY

- A. The Owner will occupy the Project in the manner outlined in Section 01 7700 - Contract Closeout, and as set forth in the General Conditions.
- B. Partial Owner Occupancy: The Owner reserves the right to occupy and to place and install equipment in completed areas of the buildings prior to Substantial Completion. Such placing of equipment and partial occupancy shall not constitute acceptance of the total Work.
 - 1. A Certificate of Substantial Completion will be executed for each specific portion of the Work to be occupied prior to Owner occupancy; however, this is not to be construed as acceptance of the specific portion of the work.
 - 2. Trade Contractor shall be responsible to obtain the requisite occupancy certificates issued by local agencies that may have jurisdiction, including the County Health Department and the local Fire Department, prior to partial Owner occupancy.
 - 3. Prior to partial Owner occupancy, mechanical and electrical systems shall be fully operational in the areas to be occupied. Required inspections and tests shall have been successfully completed. Trade Contractor agrees that he shall provide operation and maintenance of mechanical and electrical systems in occupied portions of the building, shall maintain security and insurance, shall pay for utilities, and shall be responsible to damage to the Work by his own forces, until such time as Notice of Completion is filed by the District and registered by the County Recorder.

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4. No warranties or guarantees shall go into effect until after Notice of Completion has been registered by the County Recorder for the Work as a whole.
5. Prior to partial Owner occupancy, mechanical and electrical systems shall be fully operational in the areas to be occupied. Required inspections and tests shall have been successfully completed. Trade Contractor agrees that he shall provide operation and maintenance of mechanical and electrical systems in occupied portions of the building, shall maintain security and insurance, shall pay for utilities, and shall be responsible to damage to the Work by his own forces, until such time as Notice of Completion is filed by the District and registered by the County Recorder.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION

SUMMARY OF WORK

CREEKSIDE RE-ROOFING 2024
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SECTION 01 2100
ALLOWANCES

PART 1 - GENERAL

1.01 SUMMARY

- A. Include in the Contract Sum all allowances as may be stated in the Contract Documents.

1.02 ALLOWANCES FOR PRODUCTS

- A. The amount of each allowance includes:
1. The cost of the product to the Contractor, less any applicable trade discounts.
 2. Delivery to the site.
 3. Labor required under the allowance, only when labor is specified to be included in the allowance.
 4. Applicable taxes.
- B. In addition to the amount of each allowance, include in the Contract Sum the Contractor's costs for:
1. Handling at the site, including unloading, un-crating, and storage.
 2. Protection from the weather and from damage.
 3. Labor for installation and finishing, except where labor is specified to be part of the allowance.
 4. Other expenses required to complete the installation.
 5. Contractor's and Subcontractor's overhead and profit.

PART 2 - PRODUCTS

2.01 LUMP SUM ALLOWANCES

- A. Allowances shall be one lump sum, to be disbursed as designated by the District to provide for miscellaneous District mandated changes and additions during construction.

PART 3 - EXECUTION

3.01 SELECTION OF PRODUCTS

- A. Allowance amounts shall be as stated in the Contractor's Document – Division of Work. These amounts will be documented on the bid form at the time of bid.
- B. The Architect will:
1. Consult with the Contractor in consideration of products and suppliers or installers.
 2. Make a selection in consultation with the Owner. Obtain Owner's written decision, designating:
 - a. Product, design, and finish.
 - b. Accessories and attachments.
 - c. Supplier and installer as applicable.
 - d. The cost to Contractor delivered to the site or installed, as applicable.
 - e. Manufacturer's warranties.
- C. The Contractor shall:

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1. Assist the Architect and Owner in determining qualified suppliers or installers.
2. Obtain proposals from suppliers and installers when requested by the Architect.
3. Make appropriate recommendations for consideration of the Architect.
4. Notify Architect promptly of:
 - a. Any reasonable objections Contractor may have against any supplier or party under consideration for installation.
 - b. Any effect on the Construction Schedule anticipated by selections under consideration.

3.02 CONTRACTOR RESPONSIBILITY

- A. On notification of selection, execute a purchase agreement with the designated supplier.
- B. Arrange for and process Shop Drawings, product data, and samples, as required.
- C. Make all arrangements for delivery.
- D. Upon delivery, promptly inspect products for damage or defects.
- E. Submit claims for transportation damage.
- F. Install and finish products in compliance with the requirements of referenced specification sections.

3.03 ADJUSTMENT OF COSTS

- A. Should the net cost be more or less than the specified amount of the allowance, the Contract Sum will be adjusted accordingly by Change Order. The amount of the Change Order will recognize any changes in handling costs at the site, labor, installation costs, overhead, profit, and other expenses caused by the selection under the allowance.
- B. Submit documentation for actual additional costs at the site, or other expenses caused by the selection under the allowance, within 60 days after completion of execution of the work. Failure to submit claims within the designated time will constitute a waiver of claims for additional costs.
- C. At contract closeout, reflect all approved changes in contract amounts in the final statement of accounting.

END OF SECTION

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SECTION 01 2200
UNIT PRICES

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. List of unit prices, for use in preparing Bids.

1.02 RELATED REQUIREMENTS

- A. Instructions to Bidders: Instructions for preparation of pricing for Unit Prices.
- B. Unit Prices Form: List of Unit Prices as a supplement to Bid Form

1.03 COSTS INCLUDED

- A. Unit Prices included on the Bid Form shall include full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

1.04 UNIT QUANTITIES SPECIFIED

- A. Quantities indicated in the Bid Form are for bidding and contract purposes only. Quantities and measurements of actual Work will determine the payment amount.

1.05 MEASUREMENT OF QUANTITIES

- A. Assist by providing necessary equipment, workers, and survey personnel as required.
- B. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.
- C. Measurement by Area: Measured by square dimension using mean length and width or radius.
- D. Linear Measurement: Measured by linear dimension, at the item centerline or mean chord.
- E. Contractor's Engineer Responsibilities: Sign surveyor's field notes or keep duplicate field notes, calculate and certify quantities for payment purposes.

1.06 PAYMENT

- A. Payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities of Work that is incorporated in or made necessary by the Work and accepted by the Architect, multiplied by the unit price.

1.07 SCHEDULE OF UNIT PRICES

- A. Item: Aggregate Base Course Materials; Section 32 1123.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

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SECTION 01 2900
APPLICATIONS FOR PAYMENT

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Administrative and procedural requirements governing the Contractor's Applications for Payment.
- B. Related Work:
 - 1. **RECORD DOCUMENTS:** All requirements for record documents, Specifications Section 01 7839, shall be satisfied to the Architect's satisfaction prior to Architect's processing of each month's Application for Payment.

1.02 SCHEDULE OF VALUES

- A. Coordinate preparation of the Schedule of Values with the preparation of the Network Analysis Schedule.
- B. Submit the Schedule of Values to the Architect at the earliest feasible date, but in no case later than seven (7) days after Notice to Proceed. Include with initial submission a projected monthly payment request schedule for the total cost of the project, for Owner's cash flow planning.
- C. Acceptance of the Schedule of Values by the Architect, the Inspector of Record and the Owner is required prior to approval and payment of the first application for payment.
- D. Format and Content: The Project Manual Table of Contents may be used as a general guide to format the Schedule of Values; specific item numbers may be sequentially numerical.
 - 1. The Schedule of Values shall be a detailed breakdown of the price to provide and install each item of work and material on the project.
 - 2. Each line item on the Schedule of Values shall be presented to allow the Architect to easily find that item of work within the construction during his review of the construction operations and evaluate whether that line item is 100% complete or not.
 - 3. Each line item of the Schedule of Values shall be given a value by the Contractor that, in the opinion of the Contractor, best represents the value of that work, and if required to present evidence of his opinion, the Contractor will be able to substantiate the value by the use of supplier, subcontractor written quotations, labor wages/rates, hourly estimates and/or by industry recognized cost estimating references. Contractor to list Bond amount (matching bond premium on actual bond) and Bid Allowance as separate line items.
 - 4. Arrange the Schedule of Values in a tabular form with separate columns to indicate the following for each item listed. Each sheet of the Schedule of Values shall be titled and numbered sequentially.
 - a. Line Item Number
 - b. Description of Item.
 - c. Quantity.
 - d. Unit of Measure.
 - e. Labor Price.
 - f. Material Price
 - g. Value of Line Item.
 - h. Line Item Value Request this month.
 - i. Line Item Value Previously completed.

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- j. Amount of Retention, Per Line Item
 - k. At the bottom of each sheet, the Total Amount of Columns g. h. and i. shall be tabulated and carried forward on each page and the TOTAL AMOUNT presented at the end.
- E. Round amounts off to the nearest whole dollar; the total shall equal the Contract Sum.
- F. Schedule Updating: Update and resubmit the Schedule of Values when Change Orders or Construction Change Directives result in a change in the Contract Sum, after official approval by the Owner's Board of Directors.

1.03 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by the Architect and paid for by the Owner.
- 1. The initial Application for Payment, the Application for Payment at the time of Substantial Completion, and the final Application for Payment involve additional requirements.
- B. Payment Application Times: **Monthly Progress Payment Applications must be transmitted to the Architect's office for review and approval NO LATER than the 22nd day of each month.** The Architect will review and approve the Progress Payment request and notify the Contractor of any discrepancies. The Approved Progress Payment Application shall represent the amount of Work completed through the end of that month. The original copy of the Approved Progress Payment Request form must be in the Architect's office no later than the 1st day of the following month of the application for Progress Payment, transmitted in accordance with paragraph "C" below. **NO EXCEPTIONS TO THIS REQUIREMENT WILL BE MADE.** Payment requests received after this time and date will be held to be included in the Request for Payment to the Owner the following month.
- C. Payment Application Forms: Use AIA Documents G702 and G703 forms.
- D. Application Preparation: Complete every entry on the form, including notarization and execution by a person authorized to sign legal documents on behalf of the Owner. Incomplete applications will be returned without action.
- 1. Entries shall match data on the Network Analysis Schedule. Use updated schedules if revisions have been made.
 - 2. Include amounts of Owner-approved Change Orders and Construction Change Directives issued prior to the last day of the construction period covered by the application.
- E. Transmittal: Submit four (4) executed copies of each Application for Payment to the Architect via email to the job site with originals mailed to the Architect's office. Transmit copy with transmittal form listing attachments and recording appropriate information related to the application in a manner acceptable to the Architect.
- 1. Transmit each copy with a transmittal form listing attachments, and recording appropriate information related to the application in a manner acceptable to the Architect.
- F. Waivers of Mechanics Lien: With each Application for Payment, submit waivers of mechanics lien from entity who may lawfully be entitled to file a mechanics lien or a California 20 day Preliminary Notice arising out of the Contract, and related to the Work covered by the payment.
- 1. Submit each Application for Payment with the Contractor's waiver of mechanics lien, Conditional Upon Progress Payment lien release, Unconditional Upon Progress Payment, Conditional Upon Final Payment lien release, or Unconditional Upon Final Payment as applies, and as notified by the Architect for the period covered by the Application.
 - 2. Submit final Application for Payment with, or preceded by, final waivers from entity involved with the performance of Work covered by the application who could lawfully be entitled to a lien.

APPLICATIONS FOR PAYMENT

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- G. Initial Application for Payment: Administrative actions and submittals that must precede submittal of the first Application for Payment include the following:
1. List of subcontractors (include names, addresses, contact name, emergency contact name & telephone numbers).
 2. Schedule of Values.
 3. Contractor's Construction Schedule.
 4. Schedule of unit prices, if applicable.
 5. Submittal Schedule.
 6. Copies of permits as may be required to start the Work (i.e. business license, encroachment permits, etc., may be obtained as necessary for sequence of Construction).
 7. Copies of authorizations and licenses from governing authorities for the performance of the Work.
 8. Initial progress report.
 9. Report of pre-construction meeting.
 10. Certificates of insurance and insurance policies.
 11. Performance and payment bonds.
 12. Resumes of Contractor's Project Managers and Superintendent of Construction, or Foreman.
- H. Note: Each preceding item shall be submitted to the Architect, accepted by the Architect, and approved by the Owner prior to the certification and approval of the first payment to the Contractor.
- I. Application for Payment at Substantial Completion: Following the issuance of the Certificate of Substantial Completion, submit an Application for Payment; this application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work. Administrative actions and submittals that shall proceed or coincide with this application include:
1. Occupancy permits and similar approvals.
 2. Warranties (guarantees) and maintenance agreements.
 3. Test/adjust/balance records.
 4. Maintenance instructions.
 5. Meter readings.
 6. Start-up performance reports.
 7. Change-over information related to Owner's occupancy, use, operation, and maintenance.
 8. Final cleaning.
 9. Application for reduction of retainage, and consent of surety.
 10. Advice on shifting insurance coverages.
 11. Final progress photographs.
 12. List of incomplete Work, recognized as exceptions to Architect's Certificate of Substantial Completion. Each work item value shall be listed and the total amount deducted from amounts owed over and above the retention.
- J. Final Payment Application: Administrative actions and submittals which must precede or coincide with submittal of the final payment Application for Payment include the following:

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1. Completion of Project closeout requirements.
2. Completion of items specified for completion after Substantial Completion.
3. Written assurance that unsettled claims will be settled.
4. Written assurance that Work not complete and accepted will be completed without undue delay.
5. Transmittal of required Project construction records to Owner.
6. Certified property survey.
7. Proof that taxes, fees, and similar obligations have been paid.
8. Removal of temporary facilities and services.
9. Removal of surplus materials, rubbish, and similar elements.
10. Change of door locks to Owner's access.
11. Furnish Unconditional Final Lien Releases (Form #4) from all suppliers/subcontractors who filed preliminary notices on the Project.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION

SECTION 01 3113
PROJECT COORDINATION/CONTRACTOR'S
PERSONNEL

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes administrative and supervisory requirements required to ensure orderly progress and timely completion of the Work.
- B. Related Work Described Elsewhere:
 - 1. Additional requirements for coordination are included on Contract Drawings and other Sections of the Specifications. It is intended that all work provided under this Contract shall be complete except where otherwise specified or shown. Any Drawing, document, or Section, by itself, is not a complete description of the work. Cross-references to related work, where given, are provided as a convenience and shall not limit the applicability of other requirements specified or shown unless specifically stated.

1.02 CONTRACTOR'S PERSONNEL AND RESUMES

- A. Within five (5) days of Notice to Proceed, the Contractor shall submit resumés for the proposed Contractor's Project Manager and Construction Superintendent,
- B. Project Manager: The resumé for the Project Manager designated by the Contractor to direct this Project shall list the following minimum information:
 - 1. Formal training, education, or certification in construction management or construction technology.
 - 2. Prior experience managing construction projects of the level of complexity and dollar value of this construction contract.
 - 3. Prior experience in permitting, inspection, and approval processes of regulatory agencies and utilities on projects of this magnitude and complexity.
 - 4. Reference contacts (name and telephone number) of at least three Architects or other Owners' agents for construction projects which the proposed Project Manager has directed.
- C. Construction Superintendent: The resumé for the Construction Superintendent designated by the Contractor to supervise this Project must show the following minimum information:
 - 1. Formal training, education, or certification in a construction related discipline.
 - 2. Prior experience as a full-time job-site superintendent on projects of the level of complexity and dollar value of this construction contract.
 - 3. Prior experience in permitting, inspection, and approval processes of regulatory agencies and utilities on jobs of this magnitude and complexity.
 - 4. Reference contacts (name and telephone number) of at least three Architects or other Owners' agents for construction projects which the proposed Construction Superintendent has supervised.
- D. Applications for Payment will not be processed by the Owner until written approval of the Architect is given to the Contractor for the above-named personnel.

1.03 QUALITY ASSURANCE

- A. Familiarity with Contract Documents:

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1. Contractor and all Subcontractors shall conduct a study necessary to become completely familiar with all requirements. Applicable requirements indicated or described in the Contract Documents, and the publications referred to, are a part of the Work required as though repeated in each such Section.
 2. In the event discrepancies or conflicts are encountered, notify the Architect immediately. Where there is a discrepancy between different parts of the contract documents, including referenced codes and standards, the documents requiring the higher quality, the greater quantity, or the more difficult work shall govern, unless determined otherwise in writing by the Architect.
 3. Promptly distribute required information to entities concerned and ensure the needed actions are taken.
- B. Reporting: Unless otherwise noted by the Contractor in his transmittals, all of the Contractor's data transmittals to the Architect for the Architect's review will be construed as stipulating that the Contractor has thoroughly and completely reviewed and coordinated the data prior to transmittal.
- C. Interfacing: It shall be solely the responsibility of the Contractor to make sure that each Subcontractor completes in a timely manner the assigned work and that all interfaces are prepared, connected, and function as required.

1.04 REQUEST FOR INFORMATION

- A. Requests for Information (RFIs) are required as a documented means of communication between Contractor and Architect. The Contractor shall plan, schedule, coordinate, and sequence Work so RFIs, if necessary, may be submitted to the Architect in a timely manner so as not to delay the progress of the Work. Submission of, and responses to, RFIs, with copies to Owner, shall be transmitted to the Architect. RFIs shall not be submitted to the Inspector.
- B. Telephone conversations requesting information shall be confirmed in writing for a prompt reply of all RFIs. Contractor shall coordinate the timing of transmittals and telephone conversations to be made with the Architect's office between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday.
- C. Each RFI shall be limited to one specific topic, question, or issue, and if at all possible, limited to one or two sentences. RFIs shall be submitted on a standard form on the Contractor's letterhead or on the RFI form at the end of this section and shall be numbered sequentially. All RFIs must be submitted through the Contractor. The following information must be included on each RFI:
1. RFI number, date of issue, Architect's project name and job number. Attachments, if any (sketches, sub-contractor documentation, supporting information, etc), must also show this information on each separate page.
 2. Text of RFI
 3. Indication if the topic in question may have a possible impact on Contract Amount or Contract Time.
 4. Space for a hand-printed response (one-third to one-half of the page)
 5. Space for respondent signature and date.
- D. The architect will have the same time period to respond to an RFI as "shop drawing review period".
- E. Nuisance RFIs: When the Architect responds to an RFI within five (5) working days after receipt of an RFI but when the response, answer, or information requested is already contained or included within the contract documents, or is already contained or included within referenced standards, or is a reiteration of established and common construction practices, or is information normally and legitimately generated by the Contractor or his subcontractors during preparation of submittals, the Contractor shall reimburse the Architect for his time in answering the RFI at the following hourly rates:

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Principal	\$190
Architect	\$160
Project Manager	\$130
Job Captain	\$110
Draftsperson	\$95
Agency Liaison	\$85
Clerical	\$70

- F. If nuisance RFI requires Architect's consultant's acknowledgment, the Contractor shall reimburse the Architect's consultant at the same hourly rates for the consultant's staff, plus fifteen percent for the Architect. The Contractor will be billed at the time of the Contractor's Application for Payment. Payments to the Architect not received within 30 days will be deducted from subsequent Contractor's Applications for Payment in accordance with the General Conditions.
- G. No damages for delay due to RFI response beyond allotted time will be allowed, unless Contractor can show that RFI was not foreseeable with proper planning, scheduling, coordination, and sequencing, and that the Architect's late response delayed timely purchase or delivery of equipment or material, or limited construction personnel from proceeding with their task(s) within previously listed "Progress Schedule" activity period(s).
- H. When the Architect is required to respond to an RFI that requires the Architect or Engineers to redesign or re-engineer an aspect of the Work due to a desire of the Contractor for an alternate means of construction, or to allow a deviation from the Work due to Contractor error, Contractor shall reimburse the Architect/Engineer for his time answering the RFI in the same manner as described in item E above. Time spent in obtaining approvals from regulatory agencies for the change shall also be reimbursed in like manner.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.01 PLANNING THE WORK

- A. By thorough advance planning of activities, coordinate the following in addition to other coordination activities required:
1. Materials, services, and equipment purchasing.
 2. Shipping.
 3. Receipt and storage at the site.
 4. Installation, including interface with related items provided by other Contractors.
 5. Inspection and testing, to the extent required under the Contract.
 6. Assistance in initial start-up and operational tests.
 7. Completion of the Work, including removal and disposal of Contractor's surplus material and equipment, and final cleaning of structures and sites.

3.02 COORDINATION

- A. Coordination: Coordinate construction activities included under various Sections of these Specifications to ensure the efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Sections of the Specifications that are dependent upon each other for proper installation, connection, and operation.
- B. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of the Work.

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- C. Other Contracts: Cooperate with the Owner in the coordination of other work the Owner may elect to initiate on this site.

3.03 GENERAL INSTALLATION PROVISIONS

- A. Coordination methods used by the Contractor are at the Contractor's option, except that the Architect may disapprove Work completed by the Contractor or data submitted by the Contractor when, in the Architect's judgment, coordination has been inadequate to ensure the specified quality.
- B. Mounting Heights: Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decisions to the Architect for a final decision.

3.04 WEEKLY PROGRESS MEETINGS

- A. Contractor will be required to attend Weekly Progress Meetings while working on site and two (2) weeks prior to the scheduled start of Work.

3.05 DAILY REPORTS

- A. Daily Reports for the previous day's work must be submitted to the Contractor's Field office no later than 8AM. Reports shall be on the form provided by the Contractor. They may be hand written.

3.06 CLEANING

- A. Contractor shall be responsible for daily clean up of the Contractor's own debris, and removal of same from the job site, including dumpsters and fees necessary for cleaning.
- B. The job site shall be kept in "broom-swept" condition at all times.
- C. Failure of the Contractor to Perform Cleaning Duties: The contractor will perform the work after a 48-hour Notice to the Contractor. Owner shall be reimbursed at the rate of \$75.00 per hour, plus dumping fees, for performing this work. Owner must receive reimbursement for cleaning from the Contractor prior to the next pay application processing.

3.07 TESTS AND INSPECTION

- A. Inspection Request Forms must be completed a minimum of 48 hours in advance of requested inspection and given to the Inspector.

END OF SECTION

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SECTION 01 3119
PROJECT MEETINGS

PART 1 – GENERAL

1.01 PRE-CONSTRUCTION CONFERENCE

- A. The Contractor will schedule a conference prior to the start of construction.
- B. Mandatory Attendance: Owner, Contractor, Architect, Consultants, and Trade Contractors.
- C. The purpose of the conference is to establish the working relationships between the Contractor, Architect, and Trade Contractors during the construction of the project. Areas of responsibility, operational procedures, payment processing, and scheduling will be covered in detail.

1.02 PROGRESS MEETINGS

- A. Contractor shall schedule and administer progress meetings throughout progress of the work.
- B. Contractor shall make physical arrangements for meetings, prepare agenda with copies for participants, preside at meetings, record minutes, and distribute copies to Owner, Architect, participants, and those affected by decisions made at the meetings.
- C. Attendance: Contractor, major trade contractors, suppliers when specifically requested, Architect, and Owner as appropriate to agenda topics for each meeting.
- D. Suggested Agenda: Review of Work progress, payment requests, status of progress schedule, and adjustments thereto, delivery schedules, submittals, maintenance of quality standards, pending changes and substitutions, review status of record drawings, and other affecting progress of the work.

1.03 WEEKLY SAFETY MEETINGS

- A. Each Trade Contractor responsible for holding weekly “tailgate” safety meetings with their own employees and all of their subcontractor’s employees, addressing safety pertinent to their ongoing activities. Trade Contractor to provide copy of each sign in sheet/weekly meeting minutes every week to the Contractor. Current records will be evaluated each month at the time the Progress Pay Application is processed.

PART 2 – PRODUCTS (NOT APPLICABLE)

PART 3 – EXECUTION (NOT APPLICABLE)

END OF SECTION

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SECTION 01 3216

CONSTRUCTION PROGRESS SCHEDULE

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Preliminary schedule.
- B. Construction progress schedule, with network analysis diagrams and reports.

1.02 REFERENCE STANDARDS

- A. AGC (CPSM) - Construction Planning and Scheduling Manual 2004.
- B. M-H (CPM) - CPM in Construction Management - Project Management with CPM 2015.

1.03 SUBMITTALS

- A. Within 5 days after date established in Notice to Proceed, submit preliminary schedule.
- B. If preliminary schedule requires revision after review, submit revised schedule within 5 days.
- C. Within 5 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
 - 1. Include written certification that major contractors have reviewed and accepted proposed schedule.
- D. Within 5 days after joint review, submit complete schedule.
- E. Submit updated schedule with each Application for Payment.
- F. Submit in PDF format.

1.04 SCHEDULE FORMAT

- A. Listings: In chronological order according to the start date for each activity. Identify each activity with the applicable specification section number.
- B. Diagram Sheet Size: Maximum 30 inches high by width required.
- C. Scale and Spacing: To allow for notations and revisions.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.01 PRELIMINARY SCHEDULE

- A. Prepare preliminary schedule in the form of a preliminary network diagram.

3.02 CONTENT

- A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
- B. Identify each item by specification section number.
- C. Identify work of separate stages and other logically grouped activities.
- D. Include conferences and meetings in schedule.
- E. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.
- F. Provide separate schedule of submittal dates for shop drawings, product data, and samples, owner-furnished products, products identified under Allowances, and dates reviewed submittals will be required from Architect. Indicate decision dates for selection of finishes.

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- G. Indicate delivery dates for owner-furnished products.
- H. Provide legend for symbols and abbreviations used.

3.03 NETWORK ANALYSIS

- A. Prepare network analysis diagrams and supporting mathematical analyses using the Critical Path Method.
- B. Illustrate order and interdependence of activities and sequence of work; how start of a given activity depends on completion of preceding activities, and how completion of the activity may restrain start of subsequent activities.
- C. Mathematical Analysis: Tabulate each activity of detailed network diagrams, using calendar dates, and identify for each activity:
 - 1. Preceding and following event numbers.
 - 2. Activity description.
 - 3. Estimated duration of activity, in maximum 15 day intervals.
 - 4. Earliest start date.
 - 5. Earliest finish date.
 - 6. Actual start date.
 - 7. Actual finish date.
 - 8. Latest start date.
 - 9. Latest finish date.
 - 10. Total and free float; float time shall accrue to Owner and to Owner's benefit.
 - 11. Monetary value of activity, keyed to Schedule of Values.
 - 12. Percentage of activity completed.
 - 13. Responsibility.
- D. Analysis Program: Capable of compiling monetary value of completed and partially completed activities, accepting revised completion dates, and recomputation of all dates and float.
- E. Required Reports: List activities in sorts or groups:
 - 1. By preceding work item or event number from lowest to highest.
 - 2. By amount of float, then in order of early start.
 - 3. Listing of activities on the critical path.

3.04 REVIEW AND EVALUATION OF SCHEDULE

- A. Participate in joint review and evaluation of schedule with Architect at each submittal.
- B. Evaluate project status to determine work behind schedule and work ahead of schedule.
- C. After review, revise as necessary as result of review, and resubmit within 10 days.

3.05 UPDATING SCHEDULE

- A. Maintain schedules to record actual start and finish dates of completed activities.
- B. Indicate progress of each activity to date of revision, with projected completion date of each activity.
- C. Annotate diagrams to graphically depict current status of Work.
- D. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.

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- E. Indicate changes required to maintain Date of Substantial Completion.
- F. Submit reports required to support recommended changes.
- G. Provide narrative report to define problem areas, anticipated delays, and impact on the schedule. Report corrective action taken or proposed and its effect including the effects of changes on schedules of separate contractors.

3.06 DISTRIBUTION OF SCHEDULE

- A. Distribute copies of updated schedules to Contractor's project site file, to subcontractors, suppliers, Architect, Owner, and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.

END OF SECTION

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SECTION 01 3300
SUBMITTALS

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Wherever possible throughout the Contract Documents, the minimum acceptable quality of workmanship and materials have been defined by manufacturer's name and catalog number, reference to recognized industry and government standards, or description of required attributes and performance.
 - 2. To ensure that the specified products are furnished and installed in accordance with design intent, submit design product and data in advance for review by the Owner.
 - 3. Make submittals required by the Contract Documents. Revise and resubmit as necessary to establish compliance with the specified requirements.
 - 4. **ALL SUBMITTALS, WITH THE EXCEPTION OF PHYSICAL PRODUCT OR COLOR SAMPLES, SHALL BE MADE BY DIGITAL ELECTRONIC MAIL, UTILIZING PDF FILES.** Submittal review will be returned electronically. No multiple "hard copies" will be accepted, unless previous arrangements are made with the Architect due to unusual circumstances. Large files (greater than 5MB) are to be uploaded to a file service such as YouSendIt, SendSpace, or an FTP site of choice.
- B. Related Work Described Elsewhere: Additional specific requirements for submittals are described in other Sections of these Specifications.

1.02 QUALITY ASSURANCE

- A. Coordination of Submittals: Prior to each submittal, review and coordinate each item being submitted and verify that each item and the submittal conform with the requirements of the Contract Documents. By affixing the Trade Contractor's signature to each submittal, certify that this coordination has been performed.
- B. Certificates of Compliance:
 - 1. Certify that materials used in the Work comply with specified provisions thereof. Certification shall not be construed as relieving the Contractor from furnishing satisfactory materials if, after tests are performed on selected samples, the material is found not to meet specified requirements.
 - 2. Show on each certification the name and location of the Work, name, and address of Contractor, quantity and date or dates of shipment or delivery to which the certificate applies, and name of the manufacturing or fabricating company. Certification shall be in the form of a letter or company-standard forms containing the required data. Certificates shall be signed by an officer of the manufacturing or fabricating company.
 - 3. In addition to the above information, laboratory test reports submitted shall show the date or dates of testing, the specified requirements of which testing was performed, and results of the test or tests.

1.03 SUBMITTALS

- A. Contractor shall submit all shop drawings, samples, requests for substitutions, mix designs, and other items, in accordance with this Section.
- B. Prior to submittal of the Contractor's first application for payment, submit a schedule of all submittals required by the Contract Documents.

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- C. Submittals shall be submitted per the following time schedule for the following specific items. Failure to submit by these dates will be considered sufficient grounds to delay certification of Contractor's Application for Payment until these items are received in proper order.
1. Within **10 calendar days** after Notice to Proceed:
 - a. Concrete mix design, steel connectors to be embedded in concrete foundations and slabs, **ALL STRUCTURAL STEEL**, materials for underground site plumbing, sewer, storm drainage, and underground site electrical, sheet metal roofing, fire alarm, HVAC Controls.
 2. Within **10 calendar days** after Notice to Proceed:
 - a. **All Requests for Substitutions:** After this date, no further requests for substitution will be considered, and Contractor shall be obligated to provide the specified products - **NO EXCEPTIONS.**
 - b. All materials requiring a color selection by the Owner.
 3. Within **20 calendar days** after Notice to Proceed:
 - a. **ALL OTHER SUBMITTALS.** All submittals absolutely must be turned in no later than 20 days after Notice to Proceed for every bid package – **NO EXCEPTIONS.**
- D. Provide required submittals for the following products to interface with other portions of the Work. Submit data to verify compliance only.
1. For products specified only by reference standard, select product meeting that standard, by manufacturer.
 2. For products specified by naming several products or manufacturers, select one of the products or manufacturers named.
 3. For products specified by naming one or more products or manufacturers and stating "or other approved", or "or approved equivalent", or other such wording on drawings or within specifications sections, submit a request for substitutions for product or manufacturer which is not specifically named, but only after submitting bid on specified products and systems.
- E. Other products proposed for use, including those specified only by required attributes and performance, require review by the Owner before being incorporated into the Work. Certificates of compliance or test reports shall be provided to indicate for the record that the proposed products meet the specified requirements.

PART 2 - PRODUCTS

2.01 SHOP DRAWINGS AND COORDINATION DRAWINGS

- A. Scale and Measurements: Make shop drawings to a scale sufficiently large to shown pertinent aspects of the item and its method of connection to the Work.
- B. Reproduction of Reviewed Shop Drawings: Printing and distribution of reviewed shop drawings for the Owner's use will be by the Owner.
- C. Review comments of the Reviewer will be shown in a designated color when it is returned to the Contractor. The Contractor shall make and distribute copies required for his purposes.

2.02 MANUFACTURERS' LITERATURE

- A. General: Where submitted literature from manufacturers includes data not pertinent to the submittal, indicate which portion of the contents is being submitted for review.
- B. Number of Copies Required: ONE set of pdf files delivered electronically. Hard copies will not be accepted. The Owner will distribute stamped copies to Engineers, Architect, and other pertinent

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parties. This requirement supersedes individual specification Sections that may require "hard copies".

- C. The Contractor shall make and distribute copies required for his purposes.

2.03 SAMPLES

- A. Accuracy of Samples: Precise article proposed to be furnished shall be identified with a submittal number.
- B. Number of Samples Required: Submit quantity required to be returned plus two each to be retained by the Owner.
- C. Reuse of Samples: In situations accepted by the Owner, the Owner's retained sample may be used in the construction as one of the installed items.
- D. Size of Samples: Samples shall be 6" x 6", or manufactured width by 12 inches unless otherwise required by the pertinent Specification section.

2.04 COLORS AND PATTERNS

- A. Unless the precise color and pattern is specifically described in the Contract Documents, and whenever a choice of color or pattern is available in a specified product, submit accurate color and pattern charts to the Architect for review and selection. Submit data to verify compliance only.

PART 3 - EXECUTION

3.01 IDENTIFICATION OF SUBMITTALS

- A. General: Consecutively number submittals within the respective specification section. Accompany each submittal with transmittal cover letters attached to the end of this Section. Fill out each transmittal cover letter completely, number sequentially, include specification section, name of supplier or installer, and contact person and telephone number. A copy of the Architect's submittal form must be stapled to each copy of each submittal, or each set of drawings which comprise a submittal.
- B. Internal Identification: On the first page of each copy of each submittal, and elsewhere as required for positive identification, indicate the submittal number.
- C. Re-Submittals: When material is resubmitted, transmit under a new letter of transmittal and with same submittal number plus a "alphabetic" suffix indicating its a re-submittal, e.g. 05500-1A, 05500-1B.
- D. Submittal Log: Maintain submittal log for the duration of the Contract. Show current status of submittals, with columns showing "approved", "approved as corrected", etc., to match Owner's categories. Make the submittal log available for the Owner's review upon request. Log shall be available and will be reviewed at each project meeting (by Architect).

3.02 COORDINATION OF SUBMITTALS

- A. The Contractor shall be responsible to coordinate and review all submittals prior to forwarding to Owner. All submittals shall be stamped with Contractor's stamp, signed and dated, stating:
 - 1. Contractor has reviewed submittal for compliance with requirements of the Contract Documents.
 - 2. Contractor has reviewed submittal for proper interfacing with other trades.
- B. General: Prior to making submittals, coordinate materials including, but not necessarily limited to:
 - 1. Determine and verify interface conditions, catalog numbers, and similar data,
 - 2. Coordinate with other trades as required,
 - 3. Clearly indicate deviations from requirements of the Contract Documents. Deviations which are not clearly called out as a deviation and which subsequently become a part of

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an approved submittal can under no circumstances be considered legitimate grounds for an additive change order.

- C. Grouping of Submittals: Make submittals in groups containing associated items to ensure that information is available for checking each item when it is received. Partial submittals may be rejected as not complying and the Contractor shall be strictly liable for occasioned delays.
- D. Color selections for materials in the same space or same elevation shall be submitted at one time. "Piecemeal" submission of the color samples or charts is unacceptable and will be returned awaiting a "complete" submission.

3.03 OWNER'S REVIEW

- A. General: Corrections or comments made on Shop Drawings during his review shall not relieve the Contractor from compliance with requirements of the Drawings and Specifications. This check is only for review of general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. The Contractor is responsible for confirming and correlating quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of other trades, and performing his work in a safe and satisfactory manner.
 - 1. Authority to Proceed: The notations "No Exception Taken", "Furnish as Submitted", "Approved", "Provide as Corrected", "Approved as Noted", authorize the Contractor to proceed with fabrication, purchase, or both or the items so noted, subject to the revisions, if any, required by the Owner's review comments.
 - 2. Revisions: The notation "Revise and Resubmit" or "Submit Specified Item", means make revisions required by the Owner and resubmit. If the Contractor considers required revision to be a change, he shall so notify the Owner as provided for under "Changes" or "Changes in the Work" in the General Conditions. Show each drawing revision by number, date, and subject in a revision block on the drawing. Make only those revisions directed by or accepted by the Owner.
 - 3. Rejection: The notation "Rejected" means the submission does not meet requirements of project contract documents. Make new submission meeting project contract documents.

END OF SECTION

(ATTACHMENT: SUBMITTAL TRANSMITTAL FORM)

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SUBMITTAL TRANSMITTAL FORM

GENERAL CONTRACTOR:			SUBMITTAL NO.:	
PROJECT:			DATE RANGE:	
ADDRESS:			PRINTED ON:	
TRANSMITTED TO:	DATE	QTY	SUBMITTAL PACKAGE ACTION	
MGPA ARCHITECTURE				
6965 EL CAMINO REAL	SUBMITTED BY:		TRANSMITTED FOR:	DELIVERED BY:
SUITE 105-278				
CARLSBAD, CA 92009				
TEL: 760-929-1500				
EMAIL:				
SUBMITTAL PACKAGE NO.		DESCRIPTION	TRADE	
SUBMITTAL ITEMS	DESCRIPTION	NOTES	ITEM ACTION	

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SECTION 01 3516

ALTERATION PROJECT PROCEDURES

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Special procedures required for alteration work.
- B. Related Sections:
 - 1. 01 3553 – Security Procedures

1.02 SCHEDULING

- A. Before commencing alteration or demolition work, submit for review by the Architect and approval of the Owner, a schedule showing the commencement, the order and the completion dates for the various parts of this work.
- B. Before starting work relating to existing utilities (electrical, sewer, water, heat, gas, fire lines, etc.) that will temporarily discontinue or disrupt service to the existing building, notify the Architect and the Owner 72 hours in advance and obtain the Owner's approval in writing before proceeding with this phase of the work.

1.03 PROTECTION

- A. Make such explorations and probes as are necessary to ascertain required protective measures before proceeding with demolition and removal. Give particular attention to shoring and bracing requirements so as to prevent damage to existing construction.
- B. Provide, erect, and maintain catch platforms, lights, barriers, weather protection, warning signs, and other items as required for proper protection of the public, occupants of the building, workmen engaged in demolition operations, and adjacent construction.
- C. Provide and maintain temporary protection of the existing structure designated to remain where demolition, removal and new work is being done, connections made, materials handled, or equipment moved.
- D. Take necessary precautions to prevent dust and dirt from rising by wetting demolished masonry, concrete, plaster and similar debris. Protect unaltered portions of the existing building affected by the operations under this Section by dustproof partitions and other adequate means.
- E. Provide adequate fire protection in accordance with local Fire Departments, and with Section 01 5200, Construction Facilities and Temporary Controls.
- F. Do not close or obstruct walkways, passageways or stairways. Do not store or place materials in passageways, stairs, or other means of egress. Conduct operations with minimum traffic interference.
- G. Be responsible for damage to the existing structure or contents by reason of the insufficiency of protection provided.

PART 2 - EXECUTION

2.01 WORKMANSHIP

- A. Perform demolition, removal and alteration work with due care. Be responsible for damage which may be caused by such work to part or parts of existing structures or items designated for re-use. Perform patching, restoration, and new work in accordance with applicable technical sections of the Specifications.
- B. Materials and items designated to become the property of the Owner shall be as shown. Remove such items with care, under the supervision of the trade responsible for reinstallation; protect and

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store until required. Replace material and item damaged in its removal with approved similar and equal new material.

- C. Materials and items demolished and not designated to become the property of the Owner or to be reinstalled shall become the property of the Contractor and shall be removed from the Owner's property. Storage or sale of removed items on site will not be permitted.
- D. Execute the work in a careful and orderly manner, with the least possible disturbance to the public and to the occupants of the building.
- E. Where alterations occur, or new and old work join, cut, remove, patch, repair or refinish the adjacent surfaces or so much thereof as is required by the involved conditions, and leave in as good a condition as existed prior to the commencing of the work. The alteration work shall be performed by the various respective trades which normally perform the particular items of work.
- F. Finish new and adjacent existing surfaces as specified for new work. Clean existing surfaces of dirt, grease, loose paint, etc. before refinishing.
- G. Where existing equipment and fixtures are indicated to be re-used, repair such equipment and fixtures and refinish to put in perfect working order. Refinish as directed.
- H. Cut out embedded anchorage and attachment items as required to properly provide for patching and repair of the respective finishes.

2.02 CLEANING UP

- A. Remove debris as the work progresses. Maintain the premises in a neat and clean condition.

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION

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SECTION 01 3553
SECURITY PROCEDURES

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Security measures including formal security program, entry control, personnel identification, guard service, and miscellaneous restrictions.

1.02 RELATED REQUIREMENTS

- A. Section 01 1100 - Summary of Work: use of premises and occupancy.
- B. Section 01 3516 - Alteration Project Procedures

1.03 SECURITY PROGRAM

- A. Protect Work, existing premises and Owner's operations from theft, vandalism, and unauthorized entry.
- B. Initiate program in coordination with Owner's existing security system at project mobilization.
- C. Maintain program throughout construction period until Owner occupancy.

1.04 ENTRY CONTROL

- A. Restrict entrance of persons and vehicles into Project site and existing facilities.
- B. Allow entrance only to authorized persons with proper identification.
- C. Maintain log of workers and visitors, make available to Owner on request.
- D. Contractor shall control entrance of persons and vehicles related to Owner's operations.
- E. Coordinate access of Owner's personnel to site in coordination with Owner's security forces.

1.05 PERSONNEL IDENTIFICATION

- A. Provide identification badge to each person authorized to enter premises.
- B. Badge To Include: Personal photograph, name, assigned number , expiration date and employer.
- C. Require return of badges at expiration of their employment on the Work.

1.06 GUARD SERVICE

- A. Employ uniformed armed guard service to provide watch persons at site during all non-working hours.
- B. Employ uniformed armed patrol service to provide surveillance of site on a four hour basis during all non- working hours.

1.07 RESTRICTIONS

- A. Do not allow cameras on site or photographs taken except by written approval of Owner.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

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SECTION 01 4219
REFERENCE STANDARDS

PART 1 - GENERAL

1.01 SUMMARY

- A. Throughout the Contract Documents, reference is made to codes and standards which establish qualities and types of workmanship and materials, and methods for testing and reporting on the pertinent characteristics.
- B. Provide materials and workmanship which meet or exceed the specifically named code or standard.
- C. Deliver to the Architect required proof that the materials or workmanship, or both, meet or exceed the requirements of the specifically named code or standard. Such proof shall be in the form requested by the Architect and will generally be required to be copies of a certified report of tests conducted by a testing agency acceptable for that purpose to the Architect.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Specific naming of codes or standards occurs on the Drawings and in other Sections of these Specifications. Comply with laws, ordinances, and regulations of authorities having jurisdiction. Proof of compliance shall be signed approval by the respective authorities having jurisdiction. Costs relative thereto shall be borne by the Contractor.

1.03 QUALITY ASSURANCE

- A. Familiarity with Pertinent Codes and Standards: Verify the requirements of the specifically named codes and standards as well as requirements mandated by law, ordinance, and authority. Verify that the items procured and installed in this Work meet or exceed the specified requirements.
- B. Rejection of Noncomplying Items: The Architect reserves the right to reject items incorporated into the Work which fail to meet such minimum requirements.

1.04 APPLICABLE CODES

- A. Work of the project shall conform to the following codes, copies of which will be kept at the job site by each trade contractor for their applicable scope of work, for the duration of the project. Code books to be made available for Contractor/Inspector of Record/Architect's review at all times:

PARTIAL LIST OF APPLICABLE CODES AS OF January 1, 2023

2022 California Administrative Code, Part 1, Title 24 C.C.R.

2022 California Building Code (CBC), Part 2, Title 24, C.C.R.

(2021 International Building Code Volumes 1-2 and 2022 California Amendments)

2022 California Electrical Code (CEC), Part 3, Title 24 C.C.R.

(2020 National Electrical Code and 2022 California Amendments)

2022 California Mechanical Code (CMC) Part 4, Title 24 C.C.R.

(2021 Uniform Mechanical Code and 2022 California Amendments)

2022 California Plumbing Code (CPC) Part 5, Title 24 C.C.R.

(2021 Uniform Plumbing Code and 2022 California Amendments)

2022 California Energy Code (CEC), Part 6, Title 24 C.C.R.

2022 California Fire Code, Part 9, Title 24 C.C.R.

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(2021 International Fire Code and 2022 California Amendments)

2022 California Green Building Standards Code, Part 11, Title 24, C.C.R.

2022 California Referenced Standards, Part 12, Title 24 C.C.R.

Title 19 C.C.R., Public Safety, State Fire Marshal Regulations

2019 ASME A17.1 Safety Code for Elevators and Escalators

Title 24, Part 1, Public Works, Chapter 1, Department of General Services.

1.05 APPLICABLE REFERENCE STANDARDS

- A. Standards referenced in the Specifications are usually referred to by the abbreviation of the organization's name and the designation of the document (e.g., ASTM A 36). Documents in common use may be referred to by their own designation (e.g., the National Electrical Code is published by the National Fire Protection Association as NFPA-70 but is referred to as NEC and is part of a series of documents or standards referred to as the National Fire Code). References are to the latest issue of the publication available on the date stipulated for the receipt of bids.

1. STANDARDS ORGANIZATIONS:

AA	Aluminum Association
AAMA	American Architectural Manufacturer's Association
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AGA	American Gas Association
AISC	American Institute of Steel Construction
AITC	American Institute of Timber Construction
AMCA	Air Movement and Control Association, Inc.
ANSI	American National Standards Institute, Inc.
APA	American Plywood Association
ARI	Air Conditioning and Refrigeration Institute
ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Material
AWPA	American Wood Preservers' Association
AWPB	American Wood Preservers' Bureau
AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builders' Hardware Manufacturers Association
CBC	California Building Code – Current Edition
CDA	Copper Development Association
CEC	California Electric Code – Current Edition (also see NFPA)
CGA	Compressed Gas Association
CISPI	Cast Iron Soil Pipe Institute
CMC	California Mechanical Code – Current Edition (also see IAPMO)

REFERENCE STANDARDS

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CNA	Contractors National Association
CPC	California Plumbing Code – Current Edition (also see IAPMO)
CPSC	Consumer Product Safety Commission
CRSI	Concrete Reinforcing Steel Institute
CSUSDC	Commercial Standard of U.S. Dept. of Commerce
CSMA	Chemical Specialties Manufacturing Association
CTI	Ceramic Tile Institute
FGMA	Flat Glass Marketing Council
FM	Factory Mutual System
FS	Federal Specification
GA	Gypsum Association
HI	Hydraulic Institute, Hydraulics Institute
IAPMO	International Association of Plumbing and Mechanical Officials
ICBO	International Conference of Building Officials
IEEE	Institute of Electrical and Electronics Engineers
IES	Illuminating Engineering Society
MIL	Military Specifications
ML/SFA	Metal Lath/Steel Framing Association
MSS	Manufacturers Standardization Society of the Valve and Fittings Industry
NAAM	National Association of Architectural Metal Manufacturers
NBS	National Bureau of Standards
NEBB	National Environmental Balancing Bureau
NEMA	National Electric Manufacturers Association
N FLUID PA	National Fluid Power Association
NFPA	National Fire Protection Association
NRCA	National Roofing Contractors Association
NSF	National Sanitation Foundation
NWWDA	National Wood Window and Door Association
PS	Product Standard (of NBS)
SMACNA	Sheet Metal and Air Conditioning
SDI	Steel Deck Institute, Steel Door Institute
SJI	Steel Joist Institute
SSPC	Steel Structures Painting Council
TCA	Tile Council of America
TITLE	Title 24, California Code of Regulations, Part 1 and 2, Current Edition
UL	Underwriters' Laboratories
WIC	Woodwork Institute (formerly WIC)

REFERENCE STANDARDS

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WLPDIA

Western Lath Plaster Drywall Industries
Association

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION

REFERENCE STANDARDS

01 4219 - 4

SECTION 01 4500
QUALITY CONTROL

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Quality assurance and control of installation.
- B. References
- C. Field Samples
- D. Mock-Up
- E. Project Inspector.
- F. Permits and Fees.
- G. Verified Reports.
- H. Manufacturers' field services and reports.

1.02 QUALITY ASSURANCE/CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions and workmanship to produce work of specified quality.
- B. Comply fully with manufacturers' instructions including each step in the sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as a minimum quality for the Work except when more stringent tolerances, codes or specified requirements indicate higher standards or more precise workmanship.
- E. Perform work by persons qualified to produce workmanship of specified quality.
- F. Where experience minimums for workmen, applicators, companies or manufacturers are required in individual sections, written certification and documentation substantiating such minimums shall be submitted and approved by the Architect, when requested.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

1.03 REFERENCES

- A. Conform to reference standard by date of issue current on the date of Contract Documents.
- B. Should specified reference standards conflict with Contract Documents, request clarification from the Architect before proceeding.
- C. The contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.04 FIELD SAMPLES

- A. Install field samples at the site as required by individual specifications Sections for review by Architect.
- B. Accepted samples represent a quality level for the Work.
- C. Where field sample is specified in individual Sections to be removed, clear area after field sample has been accepted by Architect and is no longer required for reference.

1.05 MOCK-UP

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- A. Tests will be performed under provisions identified in this Section
- B. Assemble and erect specified items with specified attachment and anchorage devices, flashing, seals and finishes.
- C. Where mock-up is specified in individual Sections to be removed, clear area after mock-up has been accepted by Architect and is no longer required for reference.

1.06 PROJECT INSPECTOR

- A. An Inspector, herein referred to as the "Inspector of Record" or "IOR", will be employed by the Owner and approved by Office of Regulation Services, Division of State Architect (ORS/DSA) in accordance with Part 1, Title 24, Section 4-333, California Code of Regulations. His duties are described in Part 1, Title 24, Section 4-342, CCR. His duties are also required and defined in Sections 39151, 39153, 81141 and 81143 of the California Education Code as they relate to schools.
- B. The work of construction in all stages of progress shall be subject to the personal continuous observation of the Project Inspector. He shall have free access to any or all part of the work at any time. The Contractor shall furnish the Inspector reasonable facilities for obtaining such information as may be necessary to keep him fully informed respecting the progress and manner of the work and the character of the materials. Inspection of the work shall not relieve the Contractor from any obligation to fulfill this Contract.

1.07 PERMITS AND FEES

- A. Where required by the provisions of individual sections of the Specifications, and where required to carry out construction operations, Contractor shall obtain and pay for permits and fees, including, but not limited to, Demolition, Grading, Disposals, Off-site development permits, Requirements of Water, Gas, Sewer, Flood and Sanitary districts having jurisdiction and Municipal and County Building Departments.
 - 1. Fees for final utility connections shall be paid by the Contractor and reimbursed to the Contractor by the Owner at direct cost.
 - 2. Building permit inspection notice forms or approvals requiring fees issued by the DSA will be obtained and paid for by the Owner.

1.08 VERIFIED REPORTS

- A. Contractor shall comply with Part 1, Title 24, Sections 4-336 and 4-343, California Code of Regulations and issue verified reports through the Architect as required.

1.09 MANUFACTURERS' FIELD SERVICES AND REPORTS

- A. When specified in individual specification Sections, require material or Product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment and as applicable and to initiate instructions when necessary.
- B. Manufacturers Representatives shall report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.
- C. Submit a report of observation to Architect for review.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION

QUALITY CONTROL

SECTION 01 5200

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Construction facilities and temporary controls including:
 - 1. Temporary utilities such as heat, water, electricity, and telephone.
 - 2. Sanitary facilities for construction personnel.
 - 3. Enclosures such as tarpaulins, barricades, and canopies.

1.02 PROJECT CONDITIONS

- A. Make required connections to existing utility systems with minimum disruption to services.
- B. When disruption of the existing service is required, do not proceed without the Owner's and Architect's review and, when required, provide alternate temporary service.
- C. Environmental Requirements: Provide and maintain heat, fuel, materials, and services necessary to protect work and materials against injury from extreme heat, cold, dry winds, dust, or dampness as follows:
 - 1. During the placing, setting and curing of concrete and cement work, provide sufficient heat to ensure the heating of spaces involved do not fall to less than 50 degrees Fahrenheit.
 - 2. Suspend operations on work when subject to damage by climatic conditions, flooding, or because of insufficient curing or drying of surfaces or materials.
 - 3. Take necessary action to protect site and Work from wind, flood, and storm damage.

PART 2 - PRODUCTS

2.01 GENERAL

- A. General: Construction facilities shall be subject to the Architect's review.

2.02 UTILITIES

- A. Water:
 - 1. Provide any necessary temporary water lines and water supply and, upon completion of the work, remove temporary facilities.
 - 2. Contractor may use District hose bibs, etc., for construction water, if coordinated with District Inspector and no inconvenience is caused to District staff.
- B. Electricity:
 - 1. Provide any necessary temporary wiring and, upon completion of the work, remove temporary facility.
 - 2. Provide area distribution boxes so located that the individual trades may use 100 feet maximum length extension cords to obtain adequate power and artificial lighting at points where required for the work, for inspection and for safety.
 - 3. Contractor may use District outlets if coordinated with District Inspector and no inconvenience is caused to District staff.
- C. Telephone: Contractor shall not use the School District's telephone, but shall provide his own means of communication via cellular phone or other means.

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- D. Utilities for Testing: Normal quantities required to make final tests of installed permanent systems shall be furnished at no cost to the Owner.
- E. Security: Provide temporary fencing as may be required to secure construction areas.

2.03 FIELD OFFICES AND STORAGE LOCATIONS

- A. Provide a Field Office as the Contractor deems necessary for proper operation of the Contractor's work.
 - 1. The Contractor's Field Personnel shall at all times have access to telephone and email.

2.04 PROJECT SIGNS

- A. Allow no other signs on the site except as specifically accepted by the Architect.
- B. Location of signs shall be as directed by the Architect.

PART 3 - EXECUTION

3.01 MAINTENANCE AND REMOVAL

- A. Maintain facilities and temporary controls as long as needed for the safe and proper completion of the work.
- B. Remove such construction facilities and temporary controls as rapidly as progress of the work will permit, or as directed by the Architect.

END OF SECTION

SECTION 01 6116.01
ACCESSORY MATERIAL VOC CONTENT
CERTIFICATION FORM

FORM

Identification:

Project Name: _____

Project No.: _____

Architect: _____

Use of This Form:

Because installers are allowed and directed to choose accessory materials suitable for the applicable installation, there is a possibility that such accessory materials might contain VOC content in excess of that permitted, especially where such materials have not been explicitly specified.

Contractor is required to obtain and submit this form from each installer of work on this project.

For each product category listed, circle the correct words in brackets: either [HAS] or [HAS NOT].

If any of these accessory materials has been used, attach to this form product data and MSDS sheet for each such product.

VOC content restrictions are specified in Section 01 6116.

PRODUCT CERTIFICATION

I certify that the installation work of my firm on this project:

[HAS] [HAS NOT] required the use of any ADHESIVES.

[HAS] [HAS NOT] required the use of any JOINT SEALANTS.

[HAS] [HAS NOT] required the use of any PAINTS OR COATINGS.

[HAS] [HAS NOT] required the use of any COMPOSITE WOOD or AGRIFIBER PRODUCTS.

Product data and MSDS sheets are attached.

CERTIFIED BY: (Installer/Manufacturer/Supplier Firm)

Firm Name: _____

Print Name: _____

Signature: _____

Title: _____ (officer of company)

Date: _____

END OF SECTION

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SECTION 01 6116
VOLATILE ORGANIC COMPOUND (VOC) CONTENT
RESTRICTIONS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Requirements for Indoor-Emissions-Restricted products.
- B. Requirements for VOC-Content-Restricted products.
- C. Requirement for installer certification that they did not use any non-compliant products.

1.02 RELATED REQUIREMENTS

- A. See Division 01.

1.03 DEFINITIONS

- A. Indoor-Emissions-Restricted Products: All products in the following product categories, whether specified or not:
 - 1. Interior paints and coatings applied on site.
 - 2. Interior adhesives and sealants applied on site, including flooring adhesives.
 - 3. Flooring.
 - 4. Other products when specifically stated in the specifications.
- B. VOC-Content-Restricted Products: All products in the following product categories, whether specified or not:
 - 1. Exterior and interior adhesives and sealants applied on sites.
 - 2. Wet-applied roofing and waterproofing.
 - 3. Other products when specifically stated in the specifications.
- C. Interior of Building: Anywhere inside the exterior weather barrier.
- D. Adhesives: All gunnable, trowelable, liquid-applied, and aerosol adhesives, whether specified or not; including flooring adhesives, resilient base adhesives, and pipe jointing adhesives.
- E. Sealants: All gunnable, trowelable, and liquid-applied joint sealants and sealant primers, whether specified or not; including firestopping sealants and duct joint sealers.
- F. Inherently Non-Emitting Materials: Products composed wholly of minerals or metals, unless they include organic-based surface coatings, binders, or sealants; and specifically the following:
 - 1. Concrete.
 - 2. Clay brick.
 - 3. Metals that are plated, anodized, or powder-coated.
 - 4. Glass.
 - 5. Ceramics.
 - 6. Solid wood flooring that is unfinished and untreated.

1.04 REFERENCE STANDARDS

- 1. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency current edition.

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2. ASTM D3960 - Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings 2005 (Reapproved 2018).
3. CAL (CDPH SM) - Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions From Indoor Sources Using Environmental Chambers 2017, v1.2.
4. CHPS (HPPD) - High Performance Products Database Current Edition at www.chps.net/.
5. CRI (GLP) - Green Label Plus Testing Program - Certified Products Current Edition.
6. GreenSeal GS-36 - Adhesives for Commercial Use 2013.
7. SCAQMD 1168 - Adhesive and Sealant Applications 1989 (Amended 2017).
8. SCS (CPD) - SCS Certified Products Current Edition.
9. UL (GGG) - GREENGUARD Gold Certified Products Current Edition.

1.05 SUBMITTALS

- A. See Section 01 3300, for submittal procedures.
- B. Product Data: For each VOC-restricted product used in the project, submit evidence of compliance.
- C. Installer Certifications Regarding Prohibited Content: Require each installer of any type of product (not just the products for which VOC restrictions are specified) to certify that either 1) no adhesives, joint sealants, paints, coatings, or composite wood or agrifiber products have been used in the installation of installer's products, or 2) that such products used comply with these requirements.

1.06 QUALITY ASSURANCE

- A. Indoor Emissions Standard and Test Method: CAL (CDPH SM), using Standard Private Office exposure scenario and the allowable concentrations specified in the method, and range of total VOC's after 14 days.
 1. Wet-Applied Products: State amount applied in mass per surface area.
 2. Paints and Coatings: Test tinted products, not just tinting bases.
 3. Evidence of Compliance: Acceptable types of evidence are the following;
 - a. Current UL (GGG) certification.
 - b. Current SCS (CPD) Floorscore certification.
 - c. Current SCS (CPD) Indoor Advantage Gold certification.
 - d. Current listing in CHPS (HPPD) as a low-emitting product.
 - e. Current CRI (GLP) certification.
 - f. Test report showing compliance and stating exposure scenario used.
 4. Product data submittal showing VOC content is NOT acceptable evidence.
 5. Manufacturer's certification without test report by independent agency is NOT acceptable evidence.
- B. VOC Content Test Method: 40 CFR 59, Subpart D (EPA Method 24), or ASTM D3960, unless otherwise indicated.
 1. Evidence of Compliance: Acceptable types of evidence are:
 - a. Report of laboratory testing performed in accordance with requirements.
- C. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. All Products: Comply with the most stringent of federal, State, and local requirements, or these specifications.
- B. Indoor-Emissions-Restricted Products: Comply with Indoor Emissions Standard and Test Method, except for:
 - 1. Inherently Non-Emitting Materials.
- C. VOC-Content-Restricted Products: VOC content not greater than required by the following:
 - 1. Adhesives, Including Flooring Adhesives: SCAQMD 1168 Rule.
 - 2. Aerosol Adhesives: GreenSeal GS-36.
 - 3. Joint Sealants: SCAQMD 1168 Rule.
 - 4. Wet-Applied Roofing and Waterproofing: Comply with requirements for paints and coatings.

PART 3 - EXECUTION

3.01 FIELD QUALITY CONTROL

- A. Owner reserves the right to reject non-compliant products, whether installed or not, and require their removal and replacement with compliant products at no extra cost to Owner.
- B. Additional costs to restore indoor air quality due to installation of non-compliant products will be borne by Contractor.

END OF SECTION

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SECTION 01 6200

PRODUCT OPTIONS AND SUBSTITUTIONS

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: General requirements for the proposal of substitutions. All requests for approval of product options and substitutions shall be submitted within 10 days of Notice of Award, but preferably at the onset of Bid Phase. No substitutions will be considered after 10 days post award.

1.02 MATERIAL

- A. Equipment, materials, and articles incorporated into the work shall be new and suitable for the purposes intended.
- B. Reference to equipment, material, article, or patented process by trade name or catalog number shall not be construed as limiting competition.
 - 1. In cases where the Specifications designate a material, product, thing, or service by specific proprietary brand or trade name, and there is only one brand or trade name listed, the item involved is:
 - a. Used as a standard of quality which must be satisfied without compromise, or
 - b. The only brand or trade name known to the Owner and Architect.
 - 2. Wherever in the Contract Documents a material, article, or process is indicated or specified by trade, patent, proprietary name, or the name of manufacturer, such indication shall be deemed to be followed by the words, "or equivalent, as accepted in writing by the Architect".
 - 3. If the phrase "NO SUBSTITUTIONS" is used, the product is required to be used since it is a unique product application or it has been deemed a District standard via School Board resolution.
- C. The naming of more than one manufacturer in a Section does not imply that all products of named manufacturers are acceptable for use on the Project. Where more than one proprietary name is specified, provide materials or equipment of any one of the manufacturers specified, only if full compliance with other portions of the Specifications can be provided.
- D. Construction shall be in compliance with the cited standards for the materials specified.

1.03 SUBSTITUTIONS:

- A. Should the Contractor wish to substitute an item purported to be equal to the one specified, then the Contractor shall furnish to the Architect the name of the manufacturer, model number, and other pertinent data and information respecting the "or equivalent" item which has been proposed in the bid and which the Contractor contemplates incorporating in the work. See Section 01 1300, 1.03, C. for time restrictions on substitutions. If the "or equivalent" item is not found by the Architect to be, in fact, equivalent or better, then the item specified in the Contract Documents shall be furnished.
- B. When required by the Contract Documents, or when directed by the Owner, furnish full information concerning the material or article proposed for incorporation into the work. Testing of a proposed substitute material to assure compliance with the Specifications may be required by the Owner at the Contractor's expense. When so directed, submit samples for acceptance. Equipment, material, and articles installed or used without required acceptance shall be at the risk of subsequent rejection.
- C. Substitutions shall comply with, or exceed, requirements of dimension, function, structure, durability, and appearance without exception. Use of accepted substitutions shall in no way relieve the Contractor from responsibility for compliance with the Contract Documents after installation.

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It shall be incumbent upon the Contractor using accepted substitutions to assume extra costs caused by the use of such substitutions where they affect other work.

- D. Do not substitute materials, equipment, or methods unless such substitution has been reviewed and approved by the Architect. Deferred approval items shall be submitted to the Division of the State Architect for approval prior to acceptance by Architect.
- E. "Or Equivalent": Where the phrase "or equivalent", "or approved equivalent", or "or equivalent as approved by the Architect" occurs in the Contract Documents, do not assume that materials, equipment, or methods will be accepted as equal unless the item has been specifically accepted, in writing, for the Work by the Architect and by the Division of the State Architect for items which "affect health, safety or welfare."
- F. Failure to place orders for specified equipment or material sufficiently in advance of the scheduled installation date will not be considered a valid reason upon which the Contractor may base his request for substitutions or for deviations from the Drawings and Specifications.
- G. In the event the Contractor requests changes or revisions requiring drawings or services of the Architect or his consultants, to facilitate installation or erection of any portion of the work, the Contractor shall accept the responsibility to hire and pay for the Architect's or Consultant's services. A standard hourly rate, as agreed upon, shall be paid by the Contractor whether the change is accepted or rejected. In the event the change is approved, this fee shall be deducted, and paid, from the Contract Sum.
- H. Redesigning by the Contractor: Redesigning shall be by an Engineer licensed, in the State of California, to perform such work. In the event approval is required from authorities having jurisdiction, such approval shall be obtained by the Contractor at his expense before submitting the revised design or substitution to the Architect.
- I. Revision After Approval: When a submittal has been reviewed by the Architect, resubmittal for substitution of materials or equipment will not be considered unless accompanied by an explanation acceptable to the Architect as to the reason substitution is considered necessary. Changes in Plans and Specifications, which affect safety, health or welfare, shall be made by Addenda or Change Orders approved by the Division of the State Architect.

1.04 SUBSTITUTION REQUEST FORM:

- A. Submittal of the requested information shall be accompanied by the attached Substitution Request Form. Submit six copies of each request to the Architect. The architect will distribute as appropriate.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION

(ATTACHMENT: SUBSTITUTION REQUEST FORM)

CREEKSIDE RE-ROOFING 2024
SAN DIEGO COUNTY OFFICE OF EDUCATION
SUBSTITUTION REQUEST FORM

TO:	SAN DIEGO COUNTY OFFICE OF EDUCATION			
PROJECT:	CREEKSIDE RE-ROOFING 2024			
SPECIFIED ITEM:	SECTION	PAGE	PARAGRAPH	DESCRIPTION

The undersigned requests consideration of the following:

PROPOSED

SUBSTITUTION_____

1. Attached data includes product description, specifications, drawings, photographs, performance, and test data adequate for evaluation of the requests; applicable portions of the data are clearly identified.
 - a. SUBMITTED BY CONTRACTOR:
 - (1) Attached data also includes a description of changes to Contract Documents which proposed substitution will require for proper installation.
 - b. The undersigned states that the following paragraphs unless modified on attachments, are correct:
 - (1) The proposed substitution does not affect dimensions shown on Drawings.
 - (2) The undersigned will pay for changes to the building design, including engineering design, detailing, and construction costs caused by the requested substitution.
 - (3) The proposed substitution will have no adverse effect on other work, directly related or otherwise, the construction schedule, or specified warranty requirements.
 - (4) Maintenance and service parts will be locally available for the proposed substitution.
 - c. The undersigned further states that the function, appearance, and quality of the proposed substitution are equivalent or superior to the specified item.

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By:		Date:	
Signature:		Telephone:	
Firm Name:			
Address:			
Attachments:			
Remarks:			

SECTION 01 6600
MATERIAL AND EQUIPMENT

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: General requirements for delivery, storage, and handling of materials and equipment applicable to the product sections of this specification and necessary for the construction of the Project.
- B. Related Sections:
 - 1. Section 01 3300 – Submittals
 - 2. Section 01 6200 – Product Options and Substitutions

1.02 GENERAL

- A. Material and Equipment Incorporated into the Work:
 - 1. Conform to applicable specification and standards.
 - 2. Comply with size, make, type, and quality specified.
- B. Manufactured and Fabricated Products:
 - 1. Design, fabricate and assemble in accordance with the best engineering and shop practices.
 - 2. Manufacture like parts of duplicate units to standard sizes and gages for interchangeability.
 - 3. Two or more items of the same kind shall be identical, by the same manufacturer.
- C. Reused Materials: Where the contract documents indicate that existing materials may be reused, such materials must be of like-new sound condition when reincorporated in the work.
 - 1. Metals must be free of rust, corrosion, and dents, and must be restored to a like-new finish by cleaning, polishing or refinishing, whichever is appropriate.
 - 2. Materials to be reused shall be approved for reuse by the Inspector.
- D. Supplementary materials not specifically described in each Section, but required for a complete and proper installation of the Work, shall be new, first quality of their respective kinds, and subject to review and acceptance by the District.

1.03 DELIVERY

- A. Arrange deliveries of products in accordance with construction schedules and in ample time to facilitate inspection prior to installation.
- B. Coordinate deliveries to avoid conflict with work and conditions at the site, taking into consideration:
 - 1. Work of the Contractors, or Owner.
 - 2. Limitations of storage space.
 - 3. Availability of equipment and personnel for handling products.
 - 4. Owner's use of premises.
- C. Deliver products in undamaged condition in original containers or packaging, and with identifying labels intact and legible.

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- D. Partial deliveries of component parts of equipment shall be clearly marked to identify the equipment, to permit the easy accumulation of parts, and to facilitate assembly.
- E. Immediately on delivery, inspect shipment to ensure:
 - 1. Product complies with requirements of Contract Documents and reviewed submittals.
 - 2. Quantities are correct.
 - 3. Containers and packages are intact and labels are legible.
 - 4. Products are undamaged and properly protected.
- F. The District reserves the right to observe delivered materials, to review the accompanying bills of lading, and to reject the following:
 - 1. Materials not identifiable as accepted products of the accepted manufacturer.
 - 2. Materials exhibiting shelf-lives in excess of those stipulated by the manufacturer.
 - 3. Materials not bearing the appropriate label of Underwriters Laboratories (UL), where applicable.
 - 4. Materials in opened or excessively damaged containers.
 - 5. Materials exhibiting evidence of moisture, organic matter, or other adulterants.
- G. In the event of damage or rejection by the District for stipulated cause, immediately make repairs and replacements necessary to the acceptance of the Architect and at no additional cost to the Owner.

1.04 STORAGE

- A. No payment will be made by the Owner for materials stored off-site, until such time as the materials are incorporated into the work.
- B. Store products immediately on delivery, store in accordance with manufacturer's instructions and as further required by the Owner's Storm Water Pollution Prevention Plan (SWPPP, see requirements in Division 31), and protect until installed in the Work.
- C. Store products subject to damage by elements in weather-tight enclosures.
 - 1. Maintain temperatures within limits recommended by manufacturer's instructions.
 - 2. Provide humidity control for sensitive products, as required by the manufacturer.
 - 3. Store unpacked products in a manner accessible for inspection.
- D. Exterior Storage:
 - 1. Provide substantial platforms, blocking, or skids to support fabricated products above ground and prevent soiling or staining.
 - a. Cover products subject to discoloration or deterioration from exposure to the elements, with impervious sheet coverings. Provide adequate ventilation to avoid condensation.
 - 2. Store loose granular materials on solid paved surfaces, or provide plywood platforms to prevent mixing with foreign matter.
 - a. Provide surface drainage to prevent flow or ponding of rainwater.
 - b. Prevent mixing of refuse or chemically injurious materials or liquids.

1.05 MAINTENANCE OF STORAGE

- A. Maintain a periodic system of inspection of stored products on a scheduled basis to assure that:
 - 1. State of storage facilities is adequate to provide the required conditions.
 - 2. Required environmental conditions are maintained on a continuing basis.

MATERIAL AND EQUIPMENT

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- 3. Surfaces of products exposed to elements are not adversely affected.
 - B. Mechanical and electrical equipment which requires servicing during long term storage shall have complete manufacturer's instructions for servicing accompanying each item, with notice of enclosed instructions shown on the exterior of the package.
- 1.06 PROTECTION AFTER INSTALLATION
- A. Provide protection of installed products to prevent damage from subsequent operations. Remove protection materials when no longer needed, prior to completion of work.
 - B. Control traffic to prevent damage to equipment and surfaces.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION

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SECTION 01 7419

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.01 WASTE MANAGEMENT REQUIREMENTS

- A. Owner requires that this project generate the least amount of trash and waste possible.
- B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.
- C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.
- D. Contractor shall submit periodic Waste Disposal Reports; all landfill disposal, incineration, recycling, salvage, and reuse must be reported regardless of to whom the cost or savings accrues; use the same units of measure on all reports.
- E. Contractor shall develop and follow a Waste Management Plan designed to implement these requirements.
- F. The following sources may be useful in developing the Waste Management Plan:
- G. Methods of trash/waste disposal that are not acceptable are:
 - 1. Burning on the project site.
 - 2. Burying on the project site.
 - 3. Dumping or burying on other property, public or private.
 - 4. Other illegal dumping or burying.
- H. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

1.02 DEFINITIONS

- A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.
- B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.
- C. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitability, corrosivity, toxicity or reactivity.
- D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitability, corrosivity, toxicity, or reactivity.
- E. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.
- F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.
- G. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.
- H. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.

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- I. Return: To give back reusable items or unused products to vendors for credit.
- J. Reuse: To reuse a construction waste material in some manner on the project site.
- K. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.
- L. Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.
- M. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.
- N. Toxic: Poisonous to humans either immediately or after a long period of exposure.
- O. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.
- P. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

1.03 SUBMITTALS

- A. See Section Division 01, for submittal procedures.
- B. Submit Waste Management Plan within 10 calendar days after receipt of Notice of Award of Bid, or prior to any trash or waste removal, whichever occurs sooner; submit projection of all trash and waste that will require disposal and alternatives to landfilling.
- C. Waste Management Plan: Include the following information:
 - 1. Analysis of the trash and waste projected to be generated during the entire project construction cycle, including types and quantities.
 - 2. Landfill Options: The name, address, and telephone number of the landfill(s) where trash/waste will be disposed of, the applicable landfill tipping fee(s), and the projected cost of disposing of all project trash/waste in the landfill(s).
 - 3. Landfill Alternatives: List all waste materials that will be diverted from landfills by reuse, salvage, or recycling.
 - 4. Meetings: Describe regular meetings to be held to address waste prevention, reduction, recycling, salvage, reuse, and disposal.
 - 5. Materials Handling Procedures: Describe the means by which materials to be diverted from landfills will be protected from contamination and prepared for acceptance by designated facilities; include separation procedures for recyclables, storage, and packaging.
 - 6. Transportation: Identify the destination and means of transportation of materials to be recycled; i.e. whether materials will be site-separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler.
- D. Waste Disposal Reports: Submit at specified intervals, with details of quantities of trash and waste, means of disposal or reuse, and costs; show both totals to date and since last report.
 - 1. Submit updated Report with each Application for Progress Payment; failure to submit Report will delay payment.
 - 2. Submit Report on a form acceptable to Owner.
 - 3. Landfill Disposal: Include the following information:
 - a. Identification of material.
 - b. Amount, in tons or cubic yards, of trash/waste material from the project disposed of in landfills.

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- c. State the identity of landfills, total amount of tipping fees paid to landfill, and total disposal cost.
 - d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
- 4. Incinerator Disposal: Include the following information:
 - a. Identification of material.
 - b. Amount, in tons or cubic yards, of trash/waste material from the project delivered to incinerators.
 - c. State the identity of incinerators, total amount of fees paid to incinerator, and total disposal cost.
 - d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
- 5. Recycled and Salvaged Materials: Include the following information for each:
 - a. Identification of material, including those retrieved by installer for use on other projects.
 - b. Amount, in tons or cubic yards, date removed from the project site, and receiving party.
 - c. Transportation cost, amount paid or received for the material, and the net total cost or savings of salvage or recycling each material.
 - d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
 - e. Certification by receiving party that materials will not be disposed of in landfills or by incineration.
- 6. Material Reused on Project: Include the following information for each:
 - a. Identification of material and how it was used in the project.
 - b. Amount, in tons or cubic yards.
 - c. Include weight tickets as evidence of quantity.
- 7. Other Disposal Methods: Include information similar to that described above, as appropriate to disposal method.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.02 WASTE MANAGEMENT PLAN IMPLEMENTATION

- A. Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.
- B. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor, Owner, and Architect.
- C. Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.
- D. Meetings: Discuss trash/waste management goals and issues at project meetings.
 - 1. Prebid meeting.
 - 2. Preconstruction meeting.
 - 3. Regular job-site meetings.

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- E. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.
 - 1. Provide containers as required.
 - 2. Provide adequate space for pick-up and delivery and convenience to subcontractors.
 - 3. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.
- F. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.
- G. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.
- H. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.
- I. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

END OF SECTION

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SECTION 01 7423
CLEANING

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Cleaning throughout the construction period.
- B. Related Work Described Elsewhere: In addition to standards specified herein, comply with requirements for cleaning up as described in other section of these Specifications.

1.02 QUALITY ASSURANCE

- A. Inspection: Conduct daily inspection, and more often if necessary, to verify that requirements of cleanliness are being met.
- B. Codes and Standards: In addition to the requirements specified herein, comply with pertinent requirements of authorities having jurisdiction.
- C. For final cleaning, use only a professional cleaning company experienced in commercial cleaning.

1.03 PAYMENT WITHHELD

- A. The Architect reserves the right to withhold certification of payment requests for failure on the part of the Contractor to regularly clean the Project in conformance with the Requirements of this Section.

PART 2 - PRODUCTS

2.01 CLEANING MATERIALS AND EQUIPMENT

- A. Provide the required personnel, equipment, and materials needed to maintain the specified standard of cleanliness.

2.02 COMPATIBILITY

- A. Use cleaning materials and equipment which are compatible with the surfaces being cleaned, as recommended by the manufacturer of the material to be cleaned.

PART 3 - EXECUTION

3.01 PROGRESS CLEANING

- A. General:
 - 1. Comply with all requirements of the Owner's Storm Water Pollution Prevention Plan.
 - 2. Retain stored items in an orderly arrangement allowing maximum access, not impeding drainage or traffic, and providing the required protection of materials.
 - 3. Do not allow the accumulation of scrap, debris, waste material, and other items not required for construction of this work.
 - 4. At least twice each month, and more often if necessary, remove scrap, debris, and waste material from the job site.
 - 5. Provide adequate storage for items awaiting removal from the job site, observing requirements for fire protection and protection of the ecology.
- B. Site:
 - 1. Daily, and more often if necessary, inspect the site and pick up all scrap, debris, and waste material. Remove items to the place designated for their storage. Combustible waste shall be removed from the site. Flammable waste shall be kept in sealed metal containers until removed from the site.

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2. Weekly, and more often if necessary, inspect, arrangements of materials stored on the site; restack, tidy, or otherwise service arrangements to meet the requirements specified above.
 3. Maintain the site in a neat and orderly condition.
- C. Structures:
1. Weekly, and more often if necessary, inspect the structures and pick up scrap, debris, and waste material. Remove items to the place designated for their storage.
 2. Weekly, and more often if necessary, sweep interior spaces clean.
 - a. "Clean", for the purpose of this subparagraph, shall be interpreted as meaning free from dust and other material capable of being removed by use of reasonable effort and a handheld broom, i.e., "broom-clean".
 3. As required preparatory to installation of succeeding materials, clean the structures of pertinent portions thereof to the degree of cleanliness recommended by the manufacturer of the succeeding material, using equipment and materials required to achieve the required cleanliness.
 4. Following the installation of finish floor materials, clean the finish floor daily, and more often if necessary, and while work is being performed in the space in which finish materials have been installed.
 - a. "Clean", for the purpose of this subparagraph, shall be interpreted as meaning free from foreign material which, in the opinion of the Architect, may be injurious to the finish floor material, i.e., "vacuum clean".

3.02 FINAL CLEANING

- A. Definition: Except as otherwise specifically provided, "clean", for the purpose of the Article, shall be interpreted as meaning the level of cleanliness generally provided by skilled cleaners using commercial quality building maintenance equipment and materials, i.e., "scrub and polish clean".
- B. General: Prior to completion of the work, remove from the job site all tools, surplus materials, equipment, scrap, debris, and waste, conduct final progress cleaning as described above.
- C. Site: Unless otherwise specifically directed by the Architect, water and broom clean paved areas on the site and public paved areas directly adjacent to the site. Remove resultant debris.
- D. Structures:
 1. Exterior: In areas affected by the work under this contract, visually inspect exterior surfaces and remove traces of soil, waste material, smudges, and other foreign matter. Remove traces of splashed material from adjacent surfaces. If necessary to achieve a uniform degree of exterior cleanliness, hose down the exterior of the structure. In the event of stubborn stains not removable with water, the Architect may require light sandblasting or other cleaning at no additional cost to the Owner.
 2. Interior: In areas affected by the work under this contract, visually inspect interior surfaces and remove traces of soil waste material, smudges, and other foreign matter. Remove traces of splashed materials from adjacent surfaces. Remove paint drippings, spots, stains, and dirt from finished surfaces. Use only the cleaning materials and equipment instructed by the manufacturer of the surface material.
 3. Glass: Clean glass inside and outside.
 4. Polished surfaces: On surfaces requiring the routine application of buffed polish, apply the polish recommended by the manufacturer of the material being polished. Glossy surfaces shall be cleaned and shined as intended by the manufacturer.

- 5. Carpet: Use only dry-chemical method of cleaning. Steam cleaning or water-based cleaning shall not be used on carpet. Use only dry-chemical materials and methods fully approved by the carpet manufacturer, as instructed in manufacturer's published literature.
- E. Timing: Schedule final cleaning as accepted by the Architect to enable the Owner to accept a completely clean project.

3.03 CLEANING DURING OWNER'S OCCUPANCY

- A. Should the Owner occupy the work or any portion thereof prior to its completion by the Contractor and acceptance by the Owner, responsibilities for interim and final cleaning of the occupied spaces shall be determined by the Architect in accordance with the General Conditions of the Contract.

END OF SECTION

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SECTION 01 7700
CONTRACT CLOSEOUT

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Operations and submittals required to establish Substantial Completions, Project Acceptance, and filing of Notice of Completion.
- B. Contract Completion Date is the day established by the Agreement, the Special Conditions, and the Notice to Proceed as the calendar date by which all Work must be completed in accordance with the Contract Documents. Once established, the Contract Completion Date can only be altered by Change Order. If Work is not complete in accordance with the Contract Documents by the Contract Completion Date, Contractor is obligated to pay liquidated damages to the Owner in accordance with the terms of the Contract.
- C. Substantial Completion: The Date of Substantial Completion is the date on which the Architect certifies to the Owner that construction is sufficiently complete, in accordance with the Contract Documents, that the District may occupy the Project for the use intended, and all agencies and authorities have provided written acceptance of the portions of the Work over which they have jurisdiction.
- D. Project Acceptance: The District will accept completion of the Contract after the entire Work shall have been completed to the satisfaction of the District and after issuance of the Certificate of Substantial Completion. The Work may only be accepted as complete by formal action of the Governing Board of the School District. Acceptance of the Project by the Governing Board establishes the formal and official Completion Date for the Project, to be compared against the Contract Completion Date. Project Acceptance must occur prior to Contract Completion Date to preclude assessment of liquidated damages.
- E. Notice of Completion: The date of record for the Notice of Completion shall be the date stamped on the Notice by the County Recorder at the time the County Recorder registers the Notice (note: this is normally not the same date as the date the Owner actually files the Notice of Completion with the Recorder's office).

1.02 CLOSEOUT SCHEDULE AND PROCEDURE

- A. Requirements preparatory to project acceptance:
 - 1. Contractor shall deliver certifications to Architect that no new materials containing asbestos have been included in the work.
 - 2. Temporary facilities shall be removed from the site as specified in Section 01 5200, Construction Facilities and Temporary Controls, except that under no circumstances shall Owner's and Contractor's trailers, furnishings, temporary utilities to trailers and services of on-site secretary be removed from the site until acceptance of the Project by the Owner's Governing Board.
 - 3. The entire site shall be thoroughly cleaned of all construction debris.
 - 4. Record drawings shall be completed, signed by Contractor and Inspector and submitted to Architect as specified in Section 01 7839 - Project Record Documents.
 - 5. Guarantees and warranties shall be submitted to Architect as specified in the General Conditions and Section 01 7836.
- B. Procedure for Project Acceptance:
 - 1. Contractor shall complete all Work as required by the Contract Documents, to the best standards of the industry and the trades involved. It shall be the Contractor's responsibility to provide a new, complete, properly operating, professionally finished,

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detailed, cleaned, high-quality project. There shall be no loose, untrue, or ill-fitting materials, unsightly gaps, voids, or holes, misalignments, misjudgments, shoddy workmanship, or damaged, missing, inoperable, or incomplete work. Work shall be free of smudges, spots, stains, dirt, nicks, tears, cracks, scratches, paint runs, flaws, oversprays, and all other unsightly blemishes.

2. Completion lists and correction lists for items described in the paragraph above, as opposed to short lists of a few minor corrective items that may have inadvertently been missed by the Contractor, shall be the responsibility of the Contractor, and not the Architect, Inspector, or District. By entering into this Contract, Contractor agrees that quality control is the responsibility of the Contractor. "Punch" list generated by the Architect is under no circumstances to be considered a vehicle to compel subcontractors to complete contract work.
3. Contractor shall prepare a comprehensive and complete list of corrective items for himself and his subcontractors and shall verify that these items have been corrected prior to notifying the Architect of completion. Copies of the Contractor's list(s) shall be made available to the Architect and Inspector upon request.
4. Contractor shall notify the Architect in writing when Contractor, with concurrence of Inspector, feels the project is one hundred percent complete and is ready to leave the Project. Architect shall then commence the construction review and prepare a "Punch List", or list of minor corrective items to be issued to Contractor. For convenience, reviews may be phased for various portions of the work, as each distinct portion becomes one hundred percent complete.
5. Architect will arrange for Engineering Consultants to make their construction reviews, to be completed before Architect will make his construction review. Contractor and his principal superintendent, authorized to act in behalf of the Contractor, as well as principal subcontractors that the Architect may request to be present, shall accompany the Architect/Engineers during the construction reviews.
6. Excessive amounts of corrective ("punch list") items, as judged by the Architect, shall be grounds to terminate the construction review until such time as the Contractor is deemed sufficiently complete to once again start the review. As a very rough rule of thumb, more than four minor items per typical room will be considered excessive.
7. If Owner elects to occupy the Project after the Contract Completion Date, but before the Contractor has completed the Work, Architect must make a comprehensive construction review prior to Owner's occupancy. Contractor shall reimburse Architect and Engineers for their time in conducting such review, and for the time of their clerical staffs in preparing the review documents, at the Architect's/Engineer's standard hourly rates for extra services. Contractor will be billed at the time of Contractor's Application for Payment. Payments to the Architect not received within 30 days will be deducted from subsequent Contractor's Applications for Payment in accordance with the General Conditions.
8. After completion of "Punch List" work, Contractor shall notify Architect in writing to perform an acceptance tour. Notice shall be issued at least seven (7) days in advance of the time the acceptance tour is to be performed.
9. Contractor and his principal superintendent, authorized to act in behalf of Contractor, as well as principal subcontractors that Architect may request to be present, shall accompany Architect and Inspector on acceptance tour.
 - a. If work has been completed in accordance with Contract Documents, and no further corrective measures are required, Architect will issue a Certificate of Substantial Completion and recommend that Owner accept Project and file Notice of Completion.

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- b. If work is judged to be substantially completed in accordance with Contract Documents, and only a few corrective measures are required, Architect will issue a Certificate of Substantial Completion and recommend that Owner conditionally accept Project and file Notice of Completion.
 - c. Owner will conditionally accept the Project only after Contractor provides Owner with Cashier's Check(s) for twice the agreed estimated cost to accomplish the corrective measures, to assure that Owner will have sufficient funds to accomplish work by others should Contractor not complete corrective measures in a reasonable amount of time (refer to General Conditions Article 59 and Article 61). Along with the Cashier Check(s), Contractor shall issue a written notice of intent to complete the corrective measures by a specific named date agreed to by District.
- 10. If work has not been substantially completed in accordance with Contract Documents, and several or many corrective measures are still required, Architect will recommend that Owner not accept the project and not file Notice of Completion. Instead, based on information gathered from acceptance tour, Contractor will be required to complete corrective measures and then call for another project acceptance tour following the procedure outlined above. Contractor will compensate Architect and Inspector for additional acceptance tour and deduct amount paid from final payment to Contractor.
 - 11. After Substantial Completion, Contractor shall issue an Application for Payment in accordance with Specification Section 01 2900, Part 1.03, I. All administrative actions and submittals, including conditions, outlined therein outlined must be complete prior to Owner's release of payment, and must be completed prior to agendizing for project acceptance by the OWNER'S GOVERNING BOARD.
 - 12. Upon Contractor completing all administrative actions and submittals, and meeting all conditions, Owner will agendize acceptance of the Work for the next official meeting of the Governing Board. Official action by the Governing Board shall constitute Project Acceptance. Upon acceptance, Contractor shall immediately remove trailers and other remaining temporary facilities.
 - 13. District shall file Notice of Completion with the County Recorder as soon as practicable following Project Acceptance. The date of record for the Notice of Completion shall be the date stamped on the Notice by the Recorder at the time the County Recorder registers the Notice.
 - 14. The date stamped on the Notice of Completion by the County Recorder shall be the date for commencement of all warranties and guarantees, and the date the Owner becomes responsible for security, maintenance, heating and cooling, utilities, damage to the work (unless done by Contractor's forces working on corrective items), and insurance.
 - 15. Contractor shall remain responsible for these items prior to this date.
 - 16. The Owner will inform the Contractor by letter immediately after receiving confirmation in writing from the Recorder's office of registration of the Notice of Completion. Contractor is hereby notified that the process of registering, stamping, and receipt of confirmation from the County has been known to take as much as four weeks from the time of filing.
 - 17. Upon acceptance of Project by Owner, Contractor shall submit his request for final payment in accordance with Specification Section 01 2900, Part 1.03, I. Payment of retention will not be made by Owner until 35 days after Notice of Completion has been registered by the County Recorder.
 - 18. In addition, retention payment will not be made until Contractor has filed the required Form SSS 6 with Division of the State Architect, with a copy to the Architect.

PART 2 - PRODUCTS (NOT APPLICABLE)

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PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION

SECTION 01 7823

OPERATING AND MAINTENANCE DATA

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Compilation of product data and related information appropriate for Owner's maintenance and operation of products and equipment furnished under the Contract.
 - 2. Instruction of Owner's personnel in the maintenance of products and in the operation of equipment and systems.

1.02 SUBMITTAL PROCEDURES

- A. Initial: Prior to the first Pay Application, submit a blank, tabbed binder in the proper format for review by Architect. The approved binder will be returned for the collection of information during the course of construction.
- B. Preliminary: Submit one copy of proposed manuals to Architect at least 15 days prior to final inspection or acceptance.
- C. Final: Following the indoctrination and instruction of the Owner's operating and maintenance personnel, review proposed revisions to the manual with the Architect.
 - 1. Submit three copies of accepted data in final form 10 days after the final inspection. Approval of submittal is a pre-requisite at Substantial Completion prior to Owner's awarding project for acceptance by the Governing Board.
 - 2. Record video of each indoctrination and instruction session (in-services) and submit three (3) copies of each trade. Videotapes shall be on individual flash drives in digital format.

PART 2 - PRODUCTS

2.01 FORMAT

- A. Size: Minimum 4-inch three-ring binders for 8-1/2-inch by 11-inch punched pages, completely clear plastic covered for insertion of labels on spines and covers. Submit two hard copies and one digital copy on a flash drive.
- B. Provide identifying tabbed pages. Classify by Division and by Section. All tabbing shall be in numerical order.
- C. Drawings:
 - 1. Provide reinforced punched binder tab. Bind drawings with text.
 - 2. Fanfold larger drawings to the size of text pages, for easy foldout.
- D. Cover: Identify each volume with typed or printed label, List:
 - 1. Title of Project
 - 2. Identity of separate structures as applicable.
 - 3. Identity of general subject matter covered in the manual.
- E. Spine: Identify each volume with a typed or printed label stating OPERATING AND MAINTENANCE INSTRUCTIONS, GUARANTEES AND SERVICE CONTRACTS and the following information:
 - 1. Title of Project.
 - 2. Divisions and Sections included within the volume.

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3. Volume number (i.e. "1 of 4")

PART 3 - EXECUTION

3.01 CONTENT OF MANUAL

- A. Table of Contents:
 - 1. List of each product indexed to the content of the volume.
 - 2. List with each product the name, address, and the telephone number of:
 - a. Subcontractor and installer.
 - b. Maintenance contractor, as appropriate.
 - c. Local sources of supply for parts and replacement.
- B. Product Data: Annotate each sheet to clearly identify the data applicable to the installation. Delete references to inapplicable information.
- C. Drawings;
 - 1. Supplement product data with Drawings as necessary to illustrate the following:
 - a. Relationship of component parts of equipment and systems.
 - b. Control and flow diagrams.
 - 2. Do not include Project Record Drawings as maintenance drawings.
- D. Instructions: Provide written text, as required to supplement product data for the particular installation.
- E. Warranties, Guaranties, Bonds, and Service Contracts: Include a copy of each warranty, guaranty, bond, and service contract issued.
 - 1. Provide information sheet for Owner's personnel describing the following:
 - a. Proper procedures in the event of failure or emergencies.
 - b. Circumstances under which the validity of warranties, guarantees, or bonds might be compromised.

3.02 MANUAL FOR MATERIALS AND FINISHES

- A. Instructions for Care and Maintenance: Include manufacturer's data as follows:
 - 1. Recommendations for types of cleaning agents and methods.
 - 2. Cautions against cleaning agents and methods which are detrimental to the product.
 - 3. The recommended schedule for cleaning and maintenance.
- B. Energy Conservation Features:
 - 1. Provide a list of energy conservation features, materials, components, and mechanical devices installed in the building.

3.03 MANUAL FOR EQUIPMENT AND SYSTEMS

- A. Content, for each unit of mechanical equipment and system, as appropriate.
 - 1. Description of unit and component parts:
 - a. Function, normal operating characteristics, and limiting conditions.
 - b. Performance curves, engineering data, and tests.
 - c. Complete nomenclature and commercial number of replaceable parts.
 - 2. Operating Procedures:

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- a. Start-up, break-in, routine, and normal operating instructions.
 - b. Regulation, control, stopping, shutdown, and emergency instructions.
 - c. Summer and winter operating instructions.
 3. Maintenance Procedures:
 - a. Routine operations.
 - b. Guide to "troubleshooting."
 - c. Disassembly, repair, and reassembly.
 - d. Alignment, adjusting, and checking.
 4. Servicing and lubrication schedule including a list of lubricants required.
 5. Manufacturer's printed operating and maintenance instructions.
 6. Description of the sequence of operation by control manufacturer.
 7. Original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance, including:
 - a. Predicted life of parts subject to wear.
 - b. Items recommended being stocked as spare parts.
 8. Control diagrams by the manufacturer of controls as installed in the project.
 9. Coordination drawings and color-coded piping diagrams.
 10. Charts of valve tag numbers, with the location and function of each valve.
- B. Content, for each electric and electronic system as appropriate:
1. Description of system and component parts:
 - a. Function, normal operating characteristics, and limiting conditions.
 - b. Performance curves, engineering data, and tests.
 - c. Complete nomenclature and commercial number of replaceable parts.
 2. Circuit directories of panelboards:
 - a. Electrical service.
 - b. Controls.
 - c. Communications.
 3. As-installed color-coded wiring diagrams.
 4. Operating procedures:
 - a. Routine and normal operating instructions.
 - b. Sequences required.
 - c. Special operating instructions.
 5. Maintenance procedures:
 - a. Routine operations.
 - b. Guide to "troubleshooting."
 - c. Disassembly, repair, and reassembly.
 - d. Adjustment and checking.

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6. Manufacturer's printed operating and maintenance instructions.
7. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.

3.04 INSTRUCTION OF OWNER'S PERSONNEL

- A. Prior to final inspection or acceptance, fully instruct Owner's designated operating and maintenance personnel in the operation, adjustment, and maintenance of all products, equipment, and systems installed in the project.
 1. Provide services of factory trained instructors from the manufacturer of each major item of equipment or system.
 2. Provide for each instruction session or "in-service", a camcorder operator and VHS camcorder to videotape the session. Videotapes shall be clearly labeled as to project, subject, and date. Submit tapes in triplicate.
- B. Operating and maintenance manual shall constitute the basis of instruction.
 1. Review contents of manual with personnel in full detail to explain all aspects of operation and maintenance.
 2. Review instructions on how to efficiently use state required energy conservation features, materials, components, and mechanical devices.

END OF SECTION

SECTION 01 7836

WARRANTIES, GUARANTIES, AND BONDS

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: General requirements for written warranties, guarantees, and bonds required by the Contract Documents.
- B. Referenced Sections:
 - 1. Section 01 7700 - Contract Closeout: Submittal of warranties, guarantees, and bonds as a condition of project acceptance and payment.
 - 2. Section 01 7823 - Operating and Maintenance Data: Incorporation of warranties, guarantees, and bonds into instruction manuals.
- C. Approval of the warranties, guarantees, and bonds by the Owner is a prerequisite to payment at Substantial Completion and agendizing for acceptance by the Governing Board of the Owner.

1.02 TIME PERIOD

- A. Deliver manufacturer's warranties, guarantees, and bonds required by Contract Documents, with Owner named as beneficiary. Where the manufacturer's warranty or guaranty extends for a longer time period than the Contractor's warranty and guaranty, deliver the manufacturer's warranties or guarantees in the same manner.

1.03 WARRANTY/GUARANTY FORM

- A. Submit written warranties and guarantees, except manufacturer's standard printed warranties and guarantees, on the Contractor's, subcontractors', material suppliers', or manufacturers' own letterhead, addressed to Owner, in the form found in "Required contract Forms."
- B. Submit warranties and guarantees in duplicate, and in the for indicated, signed by cognizant entities, and by Contractor in every case, with modifications as approved by Owner to suit the conditions pertaining to the warranty or guaranty.

1.04 SUBMITTAL

- A. Collect and assemble written warranties and guarantees into digitally bookmarked PDF, and email to Architect and Owner for final review and approval.
 - 1. See Sections 01 7700 and 01 7823 for additional submittal requirements.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION

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SECTION 01 7839
PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Requirements for Record Documents.
- B. Throughout progress of the work of the contract, maintain an accurate record of changes in the Contract Documents, as described below.
- C. The purpose of the record documents is to provide factual information regarding the work, both concealed and visible, which will enable future modification of design to proceed without lengthy and expensive site measurement, investigation, and examination.

1.02 QUALITY ASSURANCE

- A. General: Delegate the responsibility for maintenance of Record Documents to one person on the Contractor's staff, to be designated as the Record Documents Recorder, as accepted in advance by the Architect.
- B. Accuracy of Records: Thoroughly coordinate changes within the Record Documents, making adequate and proper entries on each page of Specifications and each sheet of drawings and other documents where such entry is required to properly show the change including as-built locations of site utilities shown on the Drawings in a diagrammatic way and progress photos. Accuracy of records shall be such that future search for items shown in the Contract Documents may reasonably rely on information obtained from the accepted Record Documents.
- C. Timing of entries: Make entries onto a Job Set, as described below, within 24 hours after receipt of information. Make entries onto a Record Documents Set, as described below, at least weekly.
- D. The Record Documents will be reviewed by the Architect, Owner's Inspector, and Owner at the regular weekly job meetings. Review will be a regular agenda item.

1.03 PAYMENT WITHHELD

- A. The Architect reserves the right to withhold certification of payment requests for failure on the part of the Contractor to maintain Record Drawings in conformance with this Section.

1.04 SUBMITTALS

- A. General: The Architect's review and approval of the current status of Record Documents will be a prerequisite to the Architect's review of requests for progress payment and request for final payment under the contract.
- B. Progress Submittals: Prior to submitting each request for progress payment, secure the Architect's review of the Record Documents as currently maintained.
- C. Final Submittal: Prior to submitting a request for final payment, submit the final Record Documents to the Architect and secure his acceptance.

1.05 PRODUCT HANDLING

- A. The Record Documents shall be maintained in the Owner's job trailer, in a secure place designated for such. The Record Documents shall be protected from deterioration and from loss and damage until completion of the work.
- B. In the event of loss of recorded data, use means necessary to again secure the data to the Architect's acceptance; such means shall include, if necessary in the opinion of the Architect, removal, and replacement of concealing materials and, in such case, replacements shall be to the standards originally specified in the Contract Documents.

PART 2 - PRODUCTS

CREEKSIDE RE-ROOFING 2024
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2.01 RECORD DOCUMENTS

- A. Contractor's Job Set: Secure from the Architect at the beginning of the Work, at no charge to the Contractor, one complete set of documents comprising the Contract. This Job Set shall be for the Contractor's own use to collect and record all pertinent information on a daily basis.
- B. Record Documents Set: The Trade Contractor shall transfer all information to this set in final form on a weekly basis. This Record Documents Set shall be submitted as the Final Record Documents.
- C. Use only a high-resolution digital camera for the Record Photographs. Cameras shall be of a type capable of imprinting the date on photographs.

PART 3 - EXECUTION

3.01 MAINTENANCE OF JOB SET

- A. Identification:
 - 1. Upon receipt of the Job Set, identify the documents with the title "Temporary Record Documents: Contractor's Job Set".
 - 2. Upon receipt of the Record Documents Set, identify in ink appropriate to sepia media with the title "Record Documents" on each sheet of the Drawings and on the cover sheet of other documents.
- B. Preservation:
 - 1. Considering the contract completion time, the probable number of occasions upon which the Job Set must be taken out for new entries and for examination, and the conditions under which these activities will be performed, devise a suitable method for protecting the Job Set.
 - 2. Use the Job Set for no purpose other than entry of new data and for review by the Architect and Inspector upon request.
 - 3. Allow no one to have access to the Record Documents other than the Record Documents Recorder. Record Documents Recorder shall not remove the Record Documents from the Owner's trailer without expressed permission of Architect or Inspector.
- C. Making Entries on Drawings:
 - 1. Job Set: Record information in a clear and legible manner. The Job Set shall be maintained on an ongoing basis. Record pertinent information and all changes as they occur, using a sharp color pencil. Each subcontractor shall be responsible to make entries as may be required by their Section of the Specification, under the supervision of the Contractor, and shall date and sign their entries.
 - 2. Record Documents - Paper:
 - a. Entries shall only be made by the Record Documents Recorder, using only the plan table designated for drafting in the Owner's trailer.
 - b. Entries shall be made weekly, on the day prior to the regular project meetings. Transfer all information collected during the previous week from the Job Set onto the mylar drawings. As each item of information is copied onto the Record Documents, carefully and completely mark with a yellow highlighter over the corresponding item on the Job Set, so that at any time it is clear what information has been transferred and what information is new.
 - c. Using permanent ink and technical pens appropriate to mylar medium, clearly describe all changes by note and by graphic line as they occur during the course of the Work. Clearly, indicate at each affected detail and other drawing the full description of changes made during construction and the actual location of items described above. Date all entries. Call attention to the entry by a plastic-lead pencil "cloud" around the area or areas affected.

PROJECT RECORD DOCUMENTS

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- d. Each utility shall be shown on its own sheet. Record Documents Recorder shall request extra copies of appropriate sheets as necessary, and clearly label sheets as to the type of utility being recorded (for example, Plumbing Site Plan P1.1 sheets shall be designated P1.1A Sewer, P1.1B Water, P1.1C Fire Line, etc.)
 - e. In the event of superseding changes to any area of the drawing, erase only that portion of the preceding change that is affected by the subsequent change before entering the subsequent change.
 - f. Include on the Record Documents all changes and as-built locations caused by Addenda, Change Orders, field directive by OSA Field Engineer, etc., such that each sheet of the Record Documents is an accurate description of the final state of the Project.
 - 3. Record Documents - Digital: Acceptable Option
 - a. All items listed in #2 above may be marked on a set of digital pdf plans, utilizing a pdf editing program such as Bluebeam. All mark-ups shall be in red, dated, and initialed.
- D. Making Entries on Other Documents:
 - 1. Where changes are caused by directives issued by the Architect, clearly indicate the change by note in ink, or rubber stamp, and reference Office of the State Architect approved addenda and change orders.
 - 2. Where changes are caused by Contractor-originated proposals reviewed by the Architect, including inadvertent errors by the Contractor which have been accepted by the Architect, clearly indicate the change by note in ink.
 - 3. Make entries in the pertinent documents as reviewed by the Architect.
- E. Before commencing backfilling of utilities or any other underground pipes, ducts, conduits, or structures, take photographs showing the relationship of ALL below ground utilities to structure(s) or other physical reference point.
 - 1. The Record Documents Recorder shall take all photographs and document their locations on a pdf Site Plan, to be a composite utility site plan designated specifically for this purpose.
 - 2. Provide a thumb-drive ("flash drive) with all photo files names corresponding to the marked location on the pdf. Provide a photo(s) of all connections, crossings, stubs, or other critical points. Thumb-drive to be labeled "RECORD PHOTOGRAPHS", and shall show project name. At least weekly, take an overall site photo showing general progress of the Work.
 - 3. If the Contractor neglects to take such photographs, Contractor shall uncover, at the Contractor's expense, the area(s) so neglected in order to provide the requisite photos. All photos shall be taken with a camera capable of imprinting the date on the photograph, and only by the Record Documents Recorder.
 - 4. Place on a pdf the number of each photograph at the location the photo was taken from, and a mark indicating which way the camera was pointed. All numbers and marks shall be clear, legible, and neatly done. Photo thumb drive and photo plan shall be considered part of the record documents.
- F. Accuracy of Entries: Use means necessary, including proper instruments or tools for measurement, to determine actual locations of the installed items.

3.02 FINAL RECORD DOCUMENTS

- A. Job Set drawings shall be submitted as supporting documentation to the Final Record Document drawings. If the Job Set drawings have been damaged during the course of the Work, secure a new

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copy of that document from the Architect at the Architect's usual charge for reproduction and carefully transfer the change data to the new copy and obtain the acceptance of the Architect.

- B. If the documents other than drawings have been kept clean successfully during the progress of the work, and if entries have been sufficiently orderly thereon and reviewed by the Architect, they will be accepted by the Architect as the final portion of the Record Documents. If any such document is not so accepted by the Architect, secure a new copy of that document from the Architect at the Architect's usual charge for reproduction and carefully transfer the change data to the new copy and obtain the acceptance of the Architect.
- C. Review and Approval: Submit the completed total set of Record Documents to the Architect as described above. Participate in review meeting or meetings as required by the Architect, make required changes in the Record Documents, and promptly deliver the final Record Documents to the Architect.

3.03 CHANGES SUBSEQUENT TO ACCEPTANCE

- A. The contractor shall have no responsibility for recording changes in the work subsequent to acceptance of the work by the Owner, except for changes resulting from replacements, repairs, and alterations made by the Contractor as a part of his guarantee. No changes will be allowed without approval of the Division of the State Architect.

END OF SECTION

CREEKSIDE RE-ROOFING 2024
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SECTION 02 4100
DEMOLITION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Selective demolition of built site elements.
- B. Selective demolition of building elements for alteration purposes.

1.02 RELATED REQUIREMENTS

- A. Section 01 7419 - Construction Waste Management and Disposal: Limitations on disposal of removed materials; requirements for recycling.

1.03 REFERENCE STANDARDS

- A. 29 CFR 1926 - U.S. Occupational Safety and Health Standards current edition.
- B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations 2019.

1.04 SUBMITTALS

- A. Refer to Division 1, for submittal procedures.
- B. Site Plan: Showing:
 - 1. Areas for temporary construction and field offices.
 - 2. Areas for temporary and permanent placement of removed materials.
- C. Demolition Plan: Submit demolition plan as specified by OSHA and local authorities.
 - 1. Indicate extent of demolition, removal sequence, bracing and shoring, and location and construction of barricades and fences.
 - 2. Identify demolition firm and submit qualifications.
- D. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

PART 2 PRODUCTS -- NOT APPLICABLE

PART 3 - EXECUTION

3.01 SCOPE

- A. Remove paving and curbs as required to accomplish new work.
- B. Remove existing roofing materials as shown on Drawings..
- C. Remove other items indicated, for salvage, relocation, and recycling.

3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

- A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 - 1. Obtain required permits.
 - 2. Comply with applicable requirements of NFPA 241.
 - 3. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
 - 4. Provide, erect, and maintain temporary barriers and security devices.

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5. Use physical barriers to prevent access to areas that could be hazardous to workers, students, school staff, or the public.
 6. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
 7. Do not close or obstruct roadways or sidewalks without permit.
 8. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
 9. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.
- B. Do not begin removal until receipt of notification to proceed from Owner.
- C. Protect existing structures and other elements that are not to be removed.
1. Provide bracing and shoring.
 2. Prevent movement or settlement of adjacent structures.
 3. Stop work immediately if adjacent structures appear to be in danger.
- D. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.
- E. Perform demolition in a manner that maximizes salvage and recycling of materials.
1. Comply with requirements of Section 01 7419 - Waste Management.
 2. Dismantle existing construction and separate materials.
 3. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection point or point of reuse.
- F. Partial Removal of Paving and Curbs: Neatly saw cut at right angle to surface.

3.03 EXISTING UTILITIES

- A. Protect existing utilities to remain from damage.
- B. Do not disrupt public utilities without permit from authority having jurisdiction.
- C. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.
- D. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.
- E. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.
- F. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

3.04 SELECTIVE DEMOLITION FOR ALTERATIONS

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
1. Verify that construction and utility arrangements are as indicated.
 2. Report discrepancies to Architect before disturbing existing installation.
 3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.

DEMOLITION

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- B. Separate areas in which demolition is being conducted from other areas that are still occupied.
 - 1. Provide, erect, and maintain temporary dustproof partitions of construction indicated on drawings in locations indicated on drawings.
- C. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
- D. Remove existing work as indicated and as required to accomplish new work.
 - 1. Remove rotted wood and corroded metals; replace with new construction specified.
 - 2. Remove items indicated on drawings.
- E. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove existing systems and equipment as indicated.
 - 1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components.
 - 2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
 - 3. Verify that abandoned services serve only abandoned facilities before removal.
 - 4. Remove abandoned pipe, ducts, conduits, and equipment; remove back to source of supply where possible, otherwise cap stub and tag with identification.
- F. Protect existing work to remain.
 - 1. Prevent movement of structure; provide shoring and bracing if necessary.
 - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 - 3. Repair adjacent construction and finishes damaged during removal work.
 - 4. Patch as specified for patching new work.

3.05 DEBRIS AND WASTE REMOVAL

- A. Remove debris, junk, and trash from site.
- B. Remove from site all materials not to be reused on site; comply with requirements of Section 01 7419 - Waste Management.
- C. Leave site in clean condition, ready for subsequent work.
- D. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

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SECTION 07 0150.19

PREPARATION FOR RE-ROOFING

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Replacement of existing roofing system in preparation for entire new roofing system.
- B. Removal of existing flashing and counterflashings.
- C. Temporary roofing protection.

1.02 RELATED REQUIREMENTS

- A. Section 07 5419: PVC Roof system.
- B. Section 07 6200 - Sheet Metal Flashing and Trim: Replacement of flashing and counterflashings.

1.03 REFERENCE STANDARDS

PART 2 - PRODUCTS

2.01 COMPONENTS

- A. Refer to following sections for additional information on components relating to this work:
 - 1. Replacement and removal of existing roofing system in preparation for entire new roofing system, see Section 07 5419.
 - 2. Remove existing flashing and counterflashings in preparation for replacement of these materials as part of this work, see Section 07 6200 for material requirements.

2.02 MATERIALS

- A. Patching Materials: Provide necessary materials in accordance with requirements of existing roofing system.
- B. Temporary Roofing Protection Materials:
 - 1. Contractor's responsibility to select appropriate materials for temporary protection of roofing areas as determined necessary for this work.
- C. Roofing Recover Materials:
 - 1. Contractor's responsibility to select appropriate materials for roofing re-cover as determined necessary for this work.

2.03 ACCESSORIES

- A. Fasteners: Type and size as required and compatible with existing and new roofing system to resist local wind uplift.
- B. Roof Vent Pipe Extension: Solid-wall PVC fitting consisting of pipe and splice sleeve inserts, configured for insertion and sealing to existing plumbing vent piping, sized to fit inside diameter of plumbing vent piping, enabling extension of piping to field-determined height to meet local building code requirements for plumbing vent pipe height above existing roof level.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that existing roof surface has been cleared of materials being removed from existing roofing system and ready for next phase of work as required.

3.02 PREPARATION

- A. Sweep roof surface clean of loose matter.

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- B. Remove loose refuse and dispose of properly off-site.

3.03 MATERIAL REMOVAL

- A. Remove only existing roofing materials that can be replaced with new materials the same day.
- B. Remove metal counter flashings.
- C. Remove damaged insulation and fasteners, cant strips, and blocking.
- D. Remove vapor retarder, sheathing paper, and underlay.
- E. Repair existing wood deck surface to provide smooth working surface for new roof system.

3.04 INSTALLATION

- A. Coordinate scope of this work with requirements for installation of new roofing system, see Section 07 5419 for additional requirements.

3.05 PROTECTION

- A. Provide protection of existing roofing system that is not having work performed on it.
- B. Provide temporary protective sheeting over uncovered deck surfaces.
- C. Provide for surface drainage from sheeting to existing drainage facilities.
- D. Do not permit traffic over unprotected or repaired deck surface.
- E. Install recover board over exposed deck surface.

END OF SECTION

SECTION 07 5419
POLYVINYL CHLORIDE (PVC) ROOFING

PART 1 – GENERAL

1.01 SUMMARY

- A. Section scope: Mechanically attached system including membrane, flashings and other components.
- B. Related Requirements:
 - 1. Division 01 – General Requirements.
 - 2. Section 07 6200 – Sheet Metal Flashing and Trim.

1.02 REFERENCES

- A. All work shall conform to the requirements of State of California Title 24, California Building Code (CBC) 2019.
- B. American Society of Testing Materials (ASTM).
 - 1. ASTM C1549 - Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer.
 - 2. ASTM D4434 - Standard Specification for Poly(Vinyl Chloride) Sheet Roofing.
 - 3. ASTM E108 - Standard Test Methods for Fire Tests of Roof Coverings.
- C. National Roofing Contractors Association (NRCA).
- D. Single Ply Roofing Institute (SPRI).
- E. Sika Corporation Roofing Applicator Handbook.
- F. Technical Bulletins.
- G. E.P.A. Energy Star.
- H. SCAQMD – South Coast Air Quality Management District.
- I. FM Approval Standard 4470 - Single-Ply, Polymer-Modified Bitumen Sheet, Built-Up Roof (BUR) and Liquid Applied Roof Assemblies for use in Class 1 and Noncombustible Roof Deck Construction.
- J. ANSI/FM 4474 - Standard for Evaluating the Simulated Wind Uplift Resistance of Roof Assemblies.

1.03 SYSTEM DESCRIPTION

- A. Roofing System:
 - 1. FM 1-105 Windstorm Resistance and MH Hail Resistance tested to FM 4470.
 - 2. Perimeter flashings: FM 1-49.
 - 3. Class [A] Fire Hazard Classification, tested to ASTM E108.
 - 4. Energy Star qualified for project location, bear Energy Star label.
 - 5. Solar Reflectance Index: Minimum 78, tested to ASTM C1549 and calculated in accordance with ASTM E1980.

1.04 SUBMITTALS

- A. Action Submittals:
 - 1. Shop Drawings: Illustrate products, installation, and relationship to adjacent construction.

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2. Product Data: Manufacturer's descriptive data and product attributes.
3. Samples: Verification samples.
- B. Informational Submittals:
 1. Certificate of Compliance: Certification that installed products meet specified design and performance requirements.
 2. FM/UL listings/approvals
 3. UL Environment validation of recycling claims
- C. Closeout Submittals:
 1. Operation and Maintenance Data.
 2. Warranties as specified in this Section.

1.05 QUALITY ASSURANCE

- A. Administrative Requirements:
 1. Pre-Installation Conference:
 - a. Attendance: Architect, Owner, Contractor, Owner's insurer, testing and inspecting agency representative, roofing system manufacturer's representative, installer, and related trades.
 - b. Review: Project conditions, manufacturer requirements, delivery, and storage, staging and sequencing, and protection of completed work.
 - c. Review governing regulations and requirements for insurance and certificates.
 - d. Deviations from the project specifications or the approved shop drawings are not permitted without prior written approval by the roofing system manufacturer.
 2. Installer Qualifications:
 - a. Firm specializing in work of this Section, with minimum 5 years experience.
 - b. Approved by the roofing system manufacturer and eligible to receive roofing system manufacturer's warranty.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to project site in original containers with seals unbroken and labeled with product manufacturer's name or product brand name.
- B. Comply with most current product data-sheet requirements when handling, storing, protecting, or installing roofing materials. Including but not limited to avoiding physical damage, deterioration by sunlight, excessive moisture, or other potentially damaging conditions.
- C. Store liquid materials in their original undamaged containers in a clean, dry, protected location; away from direct sunlight; within the temperature range noted on the product data-sheet.
- D. Handle and store roofing materials and equipment in a manner to avoid permanent deflection of the deck.

1.07 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit the roofing system to be installed according to the manufacturer's most current requirements and warranty requirements.
- B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required and confirmed by the roofing manufacturer.

1.08 WARRANTY

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- A. Refer to Division 01 for more information.
- B. Manufacturer's 20-year warranty for the roofing system.
- C. Installer's Warranty: Signed by installing applicator, covering the work of a System Warranty, including all components of roofing system installation such as membrane roofing, base flashing, roof insulation, fasteners, cover boards, vapor retarders, and walkway products, for the following warranty period:
 - 1. Five (5) years from the date of Substantial Completion.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

- A. Following manufacturers are acceptable if products meet specified requirements:
 - 1. Basis of Design: Sika Sarnafil; Sarnafil S 327, 80 mil thickness; www.sarnafil.sika.com.
 - a. ASTM D4434: Type III
 - b. NSF/ANSI Standard 347: Platinum
 - c. Guarantee membrane thickness meets or exceeds specified thickness when tested according to ASTM D751
 - 2. Carlisle Syntec. www.carlisle-syntec.com
 - 3. Tremco. Tremcoroofing.com
 - 4. Johns Manville. www.jm.com
 - 5. Versico. www.versico.com
 - 6. Or approved equivalent.
- B. Substitutions: Refer to Division 01.

2.02 ROOFING MATERIALS

- A. Roof Membrane:
 - 1. PVC Sheet: Thermoplastic membrane, polyester scrim reinforced, with lacquer coating and factory applied 9 oz. felt backing
 - 2. PVC Sheet Thickness: 80 mils.
 - 3. PVC Sheet Exposed Face Color:
 - a. EnergySmart White, initial solar reflectance of 0.83, emittance of 0.90, and solar reflective index (SRI) of 104.
- B. Roof Board: DensDeck.
- C. Vapor Barrier: ASTM D1970 and ASTM E2178; SBS modified bitumen type.
- D. Membrane Attachment Component: Type recommended by Manufacturer.
- E. Roof Board or Insulation Attachment Components: Type recommended by Manufacturer.
- F. Deck Primer: Primer recommended by Manufacturer.

2.03 ACCESSORIES

- A. Manufacturer's standard wall, curb, perimeter edge and miscellaneous flashings.
 - 1. Also, see Section 07 6200 – Sheet Metal Flashing and Trim.
- B. Manufacturer's standard sealants and pitch pocket fillers.
- C. Temporary Overnight Tie-ins

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1. Must be removed prior to start of next day's roofing.
- D. PVC welding equipment.
- E. Walkway pads: Preformed resilient pads, minimum 1/2-inch thick.
- F. Fasteners: Hot-dip galvanized or fluoropolymer coated steel.
- G. Nailers and blocking:
 1. Wood, #2 quality or better, Wolmanized or Osmose treated for fire and rot resistance.
 2. Plywood, minimum 1/2-inch CDX (C side out).
 3. Also, see Section 06 1000 – Rough Carpentry.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Applicator shall verify that the work done under related sections meets the following conditions:
 1. Roof drains and scuppers have been installed properly, or reconditioned, or replaced.
 2. Roof curbs, nailers, equipment supports, vents and other roof penetrations are properly secured and prepared to receive new roofing materials.
 3. All surfaces are smooth and free of dirt, debris, and incompatible materials.
 4. For concrete deck, verify that concrete substrate is dry and free of moisture. Verify that concrete curing compounds that will impair adhesion of roofing components to roof deck have been removed.
 5. All roof surfaces shall be free of water, ice, and snow.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's most current requirements. Remove sharp projections.
- B. Prevent materials from entering and clogging roof drains and flashings and from spilling or migrating onto surfaces of other construction. Remove roof drain plugs when no work is taking place or when rain is forecast.

3.03 INSTALLATION

- A. Installation – General:
 1. Install roofing system in accordance with roofing system manufacturer's instructions, NRCA Manual, and approved Shop Drawings.
 2. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.
 3. For tie-in with existing roofing, install roofing and auxiliary materials to maintain weather tightness of transitions.
- B. Installation – Vapor Retarder:
 1. Install vapor retarder in accordance with roofing system manufacturer's instructions.
 2. Apply one layer.
 3. Completely seal vapor retarder at parapet terminations, obstructions, and penetrations to prevent air movement into roofing system.
- C. Installation – Cover Board:

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1. Urethane Adhered: Install layer/s of insulation or roof board and secure by adhering to substrate by using Sarnacol Urethane Board Adhesive at the spacing rate and application method according to Sika and Owner's Representative/Designer.
- D. Installation – Membrane Roofing:
 1. The surface of the insulation or substrate shall be inspected prior to installation of the Sarnafil roof membrane. The substrate shall be clean, dry, free from debris and smooth with no surface roughness or contamination. Broken, delaminated, wet or damaged insulation boards shall be removed and replaced.
 2. Accurately align roofing, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
 3. Apply roofing with side laps shingled with slope of roof deck where possible.
 4. Make sure seam areas are free of debris, dirt, and dust, overlap membrane sheets, and hot-air weld side and end laps of roofing and sheet flashings according to manufacturer's most current requirements to ensure a watertight seam installation.
 - a. Verify in-field weld strength of seams a minimum of twice daily, repair seam sample areas.
 - b. Test lap edges with probe to verify seam weld continuity.
 - c. If any tears or voids in lapped seams are found repair using appropriate approved technique.
- E. Installation – Walkway Pads:
 1. Set pads in full adhesive bed.

3.04 FIELD QUALITY CONTROL

- A. Arrange for roofing system manufacturer's technical personnel to inspect roofing installation upon completion.
- B. Repair or remove and replace components of roofing system that do not comply with specified requirements.
- C. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- D. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

3.05 PROTECTION

- A. Protect new roofing system from damage and wear during construction period. Inspect new roofing for damage if used during construction.

END OF SECTION

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SECTION 07 6200

SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Fabricated sheet metal items, including flashings, counterflashings, gutters, downspouts, and exterior penetrations.
- B. Sealants for joints within sheet metal fabrications.

1.02 RELATED REQUIREMENTS

- A. Section 07 9200 - Joint Sealants: Sealing non-lap joints between sheet metal fabrications and adjacent construction.

1.03 REFERENCE STANDARDS

- A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2017a.
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.
- C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants 2018.
- D. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free 2007 (Reapproved 2018).
- E. CDA A4050 - Copper in Architecture - Handbook current edition.
- F. SMACNA (ASMM) - Architectural Sheet Metal Manual 2012.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene one week before starting work of this section.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.
- C. Samples: Submit two samples 6 by 6 inch in size illustrating metal finish color.

1.06 QUALITY ASSURANCE

- A. Perform work in accordance with SMACNA (ASMM) and CDA A4050 requirements and standard details, except as otherwise indicated.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- B. Prevent contact with materials that could cause discoloration or staining.

PART 2 - PRODUCTS

2.01 SHEET MATERIALS

- A. Pre-Finished Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24 gauge, (0.0239) inch thick base metal, shop pre-coated with PVDF coating.

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1. PVDF (Polyvinylidene Fluoride) Coating: Superior Performance Organic Finish, AAMA 2605; multiple coat, thermally cured fluoropolymer finish system.
2. Color: As selected by Architect from manufacturer's standard colors.

2.02 FABRICATION

- A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
- B. Form pieces in longest possible lengths.
- C. Hem exposed edges on underside 1/2 inch; miter and seam corners.
- D. Form material with flat lock seams, except where otherwise indicated; at moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.
- E. Fabricate corners from one piece with minimum 18 inch long legs; seam for rigidity, seal with sealant.
- F. Fabricate flashings to allow toe to extend 2 inches over roofing gravel. Return and brake edges.

2.03 GUTTER AND DOWNSPOUT FABRICATION

- A. Gutters: Profile as indicated.
- B. Seal metal joints.

2.04 EXTERIOR PENETRATION FLASHING PANELS

- A. Flashing Panels for Exterior Wall Penetrations: Premanufactured components and accessories as required to preserve integrity of building envelope; suitable for conduits and facade materials to be installed.

2.05 ACCESSORIES

- A. Fasteners: Galvanized steel, with soft neoprene washers.
- B. Primer: Zinc chromate type.
- C. Concealed Sealants: Non-curing butyl sealant.
- D. Exposed Sealants: ASTM C920; elastomeric sealant, with minimum movement capability as recommended by manufacturer for substrates to be sealed; color to match adjacent material.
- E. Plastic Cement: ASTM D4586/D4586M, Type I.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.
- B. Verify roofing termination and base flashings are in place, sealed, and secure.

3.02 PREPARATION

- A. Install starter and edge strips, and cleats before starting installation.
- B. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil.

3.03 INSTALLATION

- A. Secure flashings in place using concealed fasteners, and use exposed fasteners only where permitted..
- B. Apply plastic cement compound between metal flashings and felt flashings.
- C. Fit flashings tight in place; make corners square, surfaces true and straight in planes, and lines accurate to profiles.

SHEET METAL FLASHING AND TRIM

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- D. Seal metal joints watertight.
- E. Secure gutters and downspouts in place with concealed fasteners.

END OF SECTION

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SECTION 07 9200
JOINT SEALANTS

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes: Sealants and backing, primers, and bond-breakers as indicated on the Drawings and specified herein. Work will include, but is not limited to the following locations:
 - 1. Expansion and control joints
 - 2. Cross joints in copings and projecting work
 - 3. Sills jambs and heads of windows, doors, louvers and similar openings where they abutt dissimilar materials.
 - 4. Horizontal joints
 - 5. Hidden joints expected to undergo minimal movement.
- B. Related Sections:
 - 1. Division 01 - General Requirements.

1.02 REFERENCE STANDARDS

- A. Provide an installation in strict compliance with Title 24 requirements.
- B. ASTM C794 - Standard Test Method for Adhesion-In-Peel of Elastomeric Joint Sealants.
- C. ASTM C834 - Standard Specification for Latex Sealants.
- D. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications.
- E. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
- F. ASTM C1193 - Standard Guide for Use of Joint Sealants.
- G. ASTM C1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants.
- H. ASTM C1472 - Standard Guide for Calculating Movement and Other Effects When Establishing Sealant Joint Width.
- I. ASTM D6690 - Standard Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.

1.03 SUBMITTALS

- A. Submit manufacturer's printed literature and installation instructions on specified materials for review.
- B. Submit manufacturer's standard colors of materials for selection.
- C. Submit standard size sample of back-up material, primer, and bond-breaker proposed for each system.

1.04 QUALITY ASSURANCE

- A. Proper caulking and proper installation of sealants require that installers be thoroughly trained and experienced in the necessary skills and thoroughly familiar with the specified requirements.
- B. For caulking and installation of sealants throughout the project, use only personnel who have been specifically trained in such procedures and who are completely familiar with the joint details shown or required, and the installation requirements called for in these specifications.
- C. Coordinate this work with the work of other sections to ensure proper installations.

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- D. Provide written certification that materials in contact with the sealants and appurtenant components, such as gaskets, spacers, setting blocks, concrete curing compounds, aluminum finishes, etc., are compatible with the sealants after 21-days exposure to ultraviolet 2000 - 4000 (micro-watt radiation).
- E. Provide adhesion test data to production samples of metal and glass/spandrels, tested in accordance with ASTM C794.

1.05 GUARANTEES AND WARRANTIES

- A. Provide two-year guarantee against defects in materials and workmanship of materials and installation. Include replacement or repairs as may be required by Owner.
- B. Manufacturer's 10 year warranty for exterior sealers against sealer failure.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturers:
 - 1. Tremco. www.tremcosealants.com
 - 2. BASF Building Systems. www.buildingsystems.basf.com
 - 3. Dow Corning. www.dowcorning.com
 - 4. GE Silicones. www.siliconeforbuilding.com
 - 5. Pecora. www.pecora.com
 - 6. Sika. www.sikausa.com
- B. Substitutions: Refer to Division 01.

2.01 MATERIALS

- A. Exterior Joints in Above-Grade Surfaces:
 - 1. ASTM C920, Grade NS, single component polyurethane type, non-sag.
 - 2. Movement capability: Plus or minus 25 percent.
 - 3. Color: To be selected from manufacturer's full color range.
- B. Exterior Joints in Above-Grade Surfaces:
 - 1. ASTM C920, Grade NS, single component silicone type, nonstaining field tintable, non-sag.
 - 2. Movement capability: Plus or minus 25 percent.
 - 3. Color: To be selected from manufacturer's full color range.
- C. Joints Subject to Continuous Water Immersion:
 - 1. ASTM C920, Grade NS, single component polyurethane type, non-sag, recommended by manufacturer for continuous water immersion.
 - 2. Movement capability: Plus or minus 25 percent.
 - 3. Color: To be selected from manufacturer's full color range.
- D. Interior Joints Not Otherwise Specified:
 - 1. ASTM C834, single component acrylic latex, non-sag.
 - 2. Movement capability: Plus or minus
 - 3. Color: White.

2.02 ACCESSORIES

JOINT SEALANTS

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- A. Primers: Where necessary, provide primers compatible with not only sealant, but substrate and finish on which to be applied. Primers are to be a non-staining type and must have been specifically tested for durability on the surfaces to be sealed and are specifically recommended for this installation by their manufacturer.
- B. Joint Backing: ASTM C1330, closed cell polyethylene foam, minimum, 1.25 times joint width.
- C. Bond Breaker: Use only one of the following as best suited for the specific application and as recommended by the manufacturer of the sealant to be used.
 - 1. Type 1: Polyethylene type, pressure-sensitive adhesive, with the adhesive required only to hold tape to the construction materials shown.
 - 2. Type 2: Aluminum foil.
 - 3. Type 3: Wax paper
- D. Masking Tape: For masking around joints, provide masking tape.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Joints and surfaces which are to be caulked or sealed shall be clean, dry and free of dust, loose mortar, and other foreign materials.
- B. Clean ferrous metals of rust, mill scale, and coatings by wire brush, grinding or sandblasting. Remove oil, grease and/or temporary protective coatings with high-performance cleaners, as approved by sealant manufacturer.
- C. Joint dimensions for sealant should be reviewed and installed in accordance with sealant manufacturer's printed instructions. In no case should the sealant application be less than 1/4-inch wide, and 1/4-inch deep, except in specific metal-to-metal curtain wall applications, and then as recommended by the sealant manufacturer.
- D. Concrete or masonry joint surfaces shall be wire brushed, then air-blown clean. The joint interface must be free of form release agents of chemical retarders which may interfere with sealant adhesion and performance.
- E. Sealants shall not be applied to masonry joints where a water repellent or masonry preservative has been applied prior to caulking. When called for, waterproofing treatments should be applied after caulking.
- F. Do not caulk joints until they are in compliance with requirements of the approved manufacturer of the materials, the details as shown on the Drawings, and the specific requirements of other sections of the specification.

3.02 INSTALLATION

- A. Apply and install sealant where shown on drawings, or if not shown on Drawings, apply and install sealant materials and products which need to avoid infiltration of moisture, water, light, or air blown particles into building; and within building where changes of materials in the same or different planes could allow moisture, water, air, or light to penetrate.
- B. Provide acoustical sealants on, around and between building construction members such as framing, panel boxes, cutouts for penetrations of other materials or equipment, etc., where walls and floors are designated to be sound attenuated or acoustically treated.
- C. Install joint backing with a blunt instrument so as not to puncture the surface skin. Size of joint backing should be determined by taking the joint width and adding 25 percent to assure proper compression of backer rod.
- D. Apply sealant with a caulking gun, using proper nozzles. Use sufficient pressure to properly fill the joints with sealant to the back-up materials.

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- E. After joints have been completely filled, they shall be neatly tooled to eliminate air pockets or voids and to provide a smooth, neat appearing finish in intimate contact with interfaces. After tooling, the surface of sealant shall be free of ridges, wrinkles, sags, air pockets, and embedded impurities.
- F. It is recommended that a 40-degree F. minimum application temperature is maintained for joint sealant installations. When it is necessary, that applications be made at lower temperatures, take precautions to assure that joints have clean, dry, and frost-free surfaces. Submit letter by sealant manufacturer's representative, that surfaces are acceptable.

END OF SECTION