Construction Documents

BID SPEC

LODI UNIFIED SCHOOL DISTRICT
LUNCH SHELTERS AT:
ANSEL ADAMS ELEMENTARY SCHOOL
BORCHARDT ELEMENTARY SCHOOL
CLAIRMONT ELEMENTARY SCHOOL
ELLERTH E. LARSON ELEMENTARY SCHOOL
CHRISTA MCAULIFFE MIDDLE SCHOOL
MILLSWOOD MIDDLE SCHOOL
MANLIO SILVA ELEMENTARY SCHOOL
SUTHERLAND ELEMENTARY SCHOOL

22-1551.00

Lodi Unified School District
1305 E. Vine Street, Lodi, CA 95240

HMC Architects

October 18, 2023

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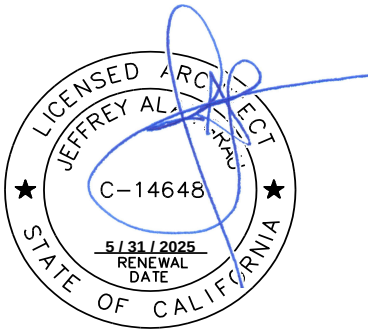

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TABLE OF CONTENTS

TABLE OF CONTENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Work included.
2. Work by others.
3. Dimensional tolerances for accessibility.
4. Contractor's use of premises.
5. Work sequence.
6. Extended liquidated damages.
7. Owner occupancy.
8. Existing utilities.
9. Asbestos.

1.2 WORK INCLUDED

A. Under a single contract **construct** the **Lunch Shelter, Lodi Unified** School District located in **Lodi**, CA. Work includes:

1. Construction of PC lunch shelter,
2. Construction of related sitework,
3. Upgrades to existing toilet rooms and path of travel as required.
4. Other work as shown in the documents and as required for a complete an operational project.

1.3 WORK BY OTHERS

A. Work on the Project which will be executed prior to start of Work of this Contract, and which is excluded from this Contract, is as follows:

1. None
2. Owner will remove furniture, supplies, drapes and salvageable items. Owner will not remove finishes or expose structure in support of Contractor's work.

B. Work in the Project which will be executed after completion of Work of this Contract, and which is excluded from this Contract, as follows:

1. None

C. Work on this Project which will be executed during the Work of this Contract which the Contractor shall coordinate with and facilitate:

1. None

1.4 DIMENSIONAL TOLERANCES FOR ACCESSIBILITY

A. While it is recognized that construction practices generally permit a level of reasonable dimensional tolerance, the installation of any items subject to compliance with the Americans with Disabilities Act Accessibility Guidelines and Chapter 11B of the California Building Code (CBC), which are not shown with dimensional tolerances, on the drawings or in the CBC, shall be considered absolute. These dimensions will be strictly enforced. Items found to be out of tolerance may require modification and/or replacement at contractor's expense.

1.5 CONTRACTOR'S USE OF PREMISES

A. Specific roads for access to and from building sites will be agreed on with the Owner. All traffic and materials delivery shall be confined to these roads.

B. Specific areas for storage of materials and site fabrication will be agreed upon. Contractor's activities shall be confined to these areas.

C. Work shall proceed in such manner as to not interfere with Owner's activities in and about nearby facilities. Exceptions will be made only after previous agreement between Owner, Architect and Contractor.

D. Fire alarm, intercom, intrusion alarm and other such tests shall be conducted outside of school hours and shall be coordinated with site personnel, if such tests occur after occupancy.

1.6 WORK SEQUENCE

A. Schedule and construct work in stages to accommodate Owner's use of the premises before and after the primary construction period. Coordinate the construction schedule and operations with the Owner's representative. The three stages of the construction process following the bid award shall be:

1. Pre-construction Stage: Pre-construction activities shall occur from the start date, to the first day of availability. Activities shall include, but are not limited to:
    a. Project scheduling/subcontractor coordination
    b. Identification of long lead materials and equipment
    c. Temporary facilities and controls
    d. Action submittals as specified, including:
        1) Shop drawing submittals
        2) Color and sample submittals
    e. Material ordering (particularly long lead items)
    f. Material stock piling
    g. Field measuring
    h. Activities to be performed by the Owner shall include:
        1) Removal of equipment and personal items from the buildings (although this may not fully occur by the first day).

i. The architect and engineers will expedite all long lead item submittals as quickly as possible. Such items must be indicated as "critical" when submitted. Substitutions of finishes, materials and equipment will not be permitted due to the lack of availability unless submittals are made early and completely.

2. Construction Stage: Primary construction activities shall occur from the date of availability, through the Date of Substantial Completion. Activities shall include work as described by the construction documents.

   a. It is the intention of the owner to make these buildings available on the dates indicated below. Certain units also may be available earlier than the dates shown.

   b. Due to the nature of the work and the type of facilities, the schedule is fixed and cannot be altered. The premises will not be available prior to date of availability. All primary work must be completed prior to Date of Substantial Completion. Critical work includes life safety, plumbing, electrical service, security and general construction. Temporary measures will be required if primary work is uncompleted at start of school date.

3. Completion/Close-out Stage: Completion and close-out activities shall occur from Date of Substantial Completion to Final Completion. Activities shall include:

   a. Completion of minor finish work. Minor work shall be considered completion or installation of items which will not interfere or hinder the Owner from utilizing the facility, such as touch-up painting, hardware adjustment, etc.

   b. Punch list work.

   c. Project close-out.

   d. All work performed during this period must occur outside of normal school hours. Arrangements must be made with the owner representative and work schedules approved.

B. Delays:

1. Minor delays: Minor delays caused by parties other than the Contractor, such as the Owner or Architect**,** will not be considered critical path delays and will not result in a time extension to the project schedule. Minor delays shall be defined as delays due to the need for review, clarifications, consideration, detailing, etc. which typically do not last more than 48 hours, are addressed promptly and solved without significant changes to the work, as determined solely by the Architect. Such items which may cause delay must be identified by the Contractor at the time of origin.

2. Other delays: Other delays caused by unknown or unforeseen conditions or significant changes or modifications requested by or required by the Owner, Architect or DSA, will be permitted only if promptly submitted, reviewed and approved by the Architect and Owner. Such delays may result in time extensions to specific work or areas of work only, and not to other unaffected portions of the project. Such delays must directly affect the critical path of the work, be shown as unavoidable and be unable to be made up through rescheduling.

C. Occupancy: The project will be occupied by the School Staff as shown below. Dates are fixed and cannot be changed. The premises will be occupied whether or not the

work is completed regardless of time extensions (if any). Any work performed after this date will need to be fully coordinated with the Owner and will be limited to after school hours or weekends.

D. Project Schedule:

1. The following schedule summarizes the major activity dates (Dates are approximate and actual start dates are subject to change):

a.	Bid	Dates
	1) Advertise to Bid (first)	TBD
	2) Advertise to Bid (second)	TBD
	3) Pre-Bid Conference	TBD
	4) Addendum (last)	TBD
	5) Bids Due	TBD
	6) Board Award	TBD
b.	Contracts	
	1) Bond Preparation	TBD
	2) Contract Execution	TBD
c.	Pre-Construction Activities	
	1) Start Date	TBD
	2) Submittals and Approvals	TBD
	3) Materials Ordering/Stockpiling	TBD
	4) School Concludes for Summer	TBD
d.	Construction	
	1) Date of facility availability	TBD
	2) Construction, All Units	TBD
	3) Begin turning over spaces to District	TBD
	4) Owner Slack Period	TBD
e.	Occupancy: In order to accommodate a phased occupancy by the Owner, the Contractor will turn the buildings over for occupancy as follows:	
	1) Occupancy - Staff	TBD
	2) Occupancy - Students	TBD
f.	Completion/Close-out	
	1) Substantial Completion Date	TBD
	2) Complete Minor Finish Work	TBD
	3) Complete Punch List Work	TBD
	4) Final Completion	TBD
	5) Closeout	TBD

1.7 EXTENDED LIQUIDATED DAMAGES

A. At the conclusion of the Punch List Work Completion date, all items are to be 100% finalized. Should work remain uncompleted beyond this date, the Owner may re-instate liquidated damages until all such work has been accepted. In addition, work

uncompleted may, at the Owner's option, be completed by others and charged against the contract amount.

1.8 OWNER OCCUPANCY

A. Owner will occupy nearby premises during construction.

B. Refer to General Conditions [**and Supplementary Conditions]** for requirements for partial occupancy by Owner.

C. Owner will not occupy buildings included in this scope of work during the primary construction period. However, occupancy will occur as shown above.

D. Owner may occupy other buildings on premises during construction and may be present on site during summer construction period.

1.9 EXISTING UTILITIES

A. It is recognized by the District and the Contractor that the location of existing utility facilities as shown on contract drawings and specifications are approximate; their exact location is unknown.

B. Recognition is given to the fact there may be additional utilities existing on the property unknown to either party to the Contract. Location of utilities as shown on drawings and specifications represent the best information obtainable from utility maps and other information furnished by the various agencies involved. The Owner warrants neither the accuracy nor the extent of actual installations as shown on the drawings and specifications.

C. Because of this uncertainty, it may become necessary for the Architect to make adjustments in the line or grade of sewers or storm drains. Installation of such adjusted lines shall be made at the regular unit price bid for the work, and no additional compensation will be paid therefore, unless the scope and character of the work has been changed.

D. The Contractor agrees and is required to coordinate and fully cooperate with the Owner and utility owners for the location, relocation, and protection of utilities. The Contractor's attention is directed to the existence of utilities, underground and overhead, necessary for all buildings within the area of work. Prior to start of trenching operations, the Contractor shall meet with Owner Representative(s) to fully review known utility locations which may affect the work.

E. In accordance with Section 4215 of the Government Code of the State of California, the Owner shall make provisions to compensate the Contractor for the costs of locating, repairing damage not due to the failure of the Contractor to exercise reasonable care, and removing or relocating such main and trunk line utility facilities not indicated in the plans and specifications with reasonable accuracy, and for equipment on the project necessarily idled during such work. Compensation will be in accordance with the provisions of these specifications providing for change orders. Nor shall the Contractor be assessed liquidated damages for delay in completion of the project, when such delay

was caused by the failure of the Owner or owner of the utility to provide for removal or relocation of such utility facilities.

F. Nothing herein shall be deemed to require compensation to the Contractor or to relieve him from being assessed liquidated damages for such delay when the presence of unidentifiable utilities can be inferred from the presence of other visible facilities, such as buildings, meter and junction boxes, on or adjacent to the site of construction, and the damage to existing utilities or delay was caused in whole or in part by a failure of the Owner to indicate the presence of such service laterals or appurtenances.

G. In the event the Contractor discovers utilities not identified in the Contract plans or specifications, the Contractor shall immediately notify the Architect and the utility owner by the most expeditious means available and later confirm in writing.

H. Existing building utilities shall not be interrupted during normal operating hours.

1.10 HAZARDOUS MATERIALS

A. Prior to start of work, the Contractor shall obtain and review the Owner's hazardous materials reports on any existing facilities to become familiar with existing conditions.

B. Should hazardous materials outside of the scope of work be discovered during construction operations, the contractor shall immediately notify the Project Inspector and Architect and shall suspend work in the area until necessary identification, testing and abatement (if required) is completed.

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Pre-construction Meeting.
2. Regular project meetings.
3. Pre-installation meetings.

1.2 GENERAL

A. The Architect shall make arrangements for meetings, prepare agenda with copies for participants, preside at meetings, record minutes, and distribute copies to the Owner, Project Inspector, Contractor, participants, and others affected by the decisions made.

B. Attendance required: Project Superintendent, Project Manager (if any), major Subcontractors (as requested), Architect, Project Inspector, and others as appropriate to the meeting topics.

1.3 PRE-CONSTRUCTION MEETING

A. Upon issuing a notice of intent to award the contract, the Architect will schedule a pre-construction meeting.

B. Agenda: Architect and Contractor shall prepare an agenda and distribute copies at least one week in advance of the Pre-Construction meeting.

C. Architect's agenda may include, but not limited to, discussion of the following items:

1. Project description and scope of work.
2. Accepted alternates.
3. Temporary facilities and use of the site.
4. Environmental procedures.
5. Legal and code requirements.
6. Designation of personnel representing the parties to the contract; lines of communication.
7. Communication and responsibilities.
8. Submittal procedures in accordance with Section 01 3300.
9. Construction schedule and critical path.
10. Schedule of values.
11. Record drawings.
12. Progress payments.
13. Change orders and time extensions (related to critical path).
14. Inspection and testing.
15. Project closeout.

1.4 PROJECT MEETINGS

A. The Architect will schedule and run project meetings at appropriate intervals throughout the project to review the short-term project schedule and to discuss issues requiring resolution. It is the duty of the Contractor to attend, participate in, and comply with the agreements reached and direction set at these meetings.

1.5 PRE-INSTALLATION MEETINGS

A. The Contractor shall schedule and run pre-installation meetings in accordance with the product specifications.

1.6 SPECIAL MEETINGS

A. The Architect may occasionally schedule special meetings for the purpose of discussing work requiring a significant coordination effort or for resolving issues which require more attention than they can be given in the regularly scheduled meetings. The Contractor shall attend these meetings along with representatives of subcontractors, suppliers, and/or manufacturers when appropriate for the subject matter to be discussed.

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Requirements for the following:
   a. Electronic Data Transfer.
   b. Substitutions: Specific procedures for submission and approval of products other than those specified or noted on the Drawings.
   c. Procedures for processing of Contractors “Requests for Interpretation” (RFI) questions.
2. Procedures to be followed in preparing and submitting the following:
   a. Subcontractor List.
   b. Progress Schedule.
   c. Schedule of Values.
   d. Shop Drawings.
   e. Product Data/Material Lists.
   f. Samples.
   g. Requests for Information (RFI).
   h. Deferred Approvals.
   i. Record Drawings.
   j. Certifications including those required for material VOC content.
   k. Maintenance/Operating Manuals.
   l. Warranties and Extended Guarantees.
   m. Extra Stock.
3. Substitution Procedures: Specific requirements for submission and approval of products other than those specified or noted on the Drawings.
4. Procedures for processing of Contractors “Requests for Interpretation” (RFI) questions.
5. Electronic Data Transfer.

1.2 RELATED REQUIREMENTS

A. Section 01 6116, Volatile Organic Compound (VOC) Restrictions; “Accessory Material VOC Content Certification Form.”

B. Section 01 7700, Closeout Procedures.

C. Section 01 7836, Warranties; guarantee/warranty forms.

D. Test reports: Pertinent Specification Sections (by testing lab).

E. Individual requirements for submittals also are described in other Sections of these Specifications.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as action submittals.

B. Informational Submittals: Written and graphic information and physical samples indicated in individual Specification Sections as informational submittals that do not require Architect's responsive action.

C. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.4 ADMINISTRATIVE REQUIREMENTS

A. General;

1. Shop drawings, product data, and samples are in no case to be considered Contract Documents but are to be treated only as instruments of convenience and facility to further the progress of the Work.
2. Miscellaneous systems not specifically specified but installed to meet code requirements or for other reasons are subject to Architect's review prior to installation.

B. Shop drawings, product data, samples and supporting data shall be prepared by Contractor or its suppliers but shall be submitted to Architect by Contractor as the instruments of the Contractor.

C. Coordination of Submittals:

1. Before submitting a shop drawing or any related material to Architect, Contractor shall: review each such submission for conformance with the means, methods, techniques, sequences, and operations of construction, and safety precautions and programs incidental thereto, which are the sole responsibility of the Contractor; approve each such submission before submitting it; and so stamp each such submission before submitting it. By affixing the Contractor's signature to each submittal, the Contractor certifies that this coordination has been performed.
2. Architect shall assume that no shop drawing or related submittal comprises a variation unless the Contractor advises the Architect otherwise via a written instrument which is acknowledged by the Architect in writing.

D. Grouping of Submittals:

1. Unless otherwise specified, make submittals in groups containing all associated items to assure that information is available for checking each item when it is received.

2. Partial submittals may be rejected as not complying with the provisions of the Contract. The Contractor may be held liable for delays so occasioned.

E. Architect will check submittals for conformance with design concepts of project. Approval by Architect covers only such conformance. Effort will be made by Architect to discover any errors, but responsibility for accuracy and correctness of submittals shall be with the Contractor.

F. Approval of submittals will be on a general basis only and shall not relieve the Contractor from their responsibility for proper fitting and construction of the Work, nor from furnishing materials and labor required by the Contract which may not be indicated on the submittals when approved.

G. No portion of the work requiring submittals shall be commenced until the submittal for that portion of the work has been approved by Architect. All such portions of work shall be in accordance with the approved submittals. Any work performed without approved submittals will be done so at the Contractor's own risk. Work found not to be in compliance with the approved submittals shall be removed and corrected at the Contractor's own expense.

H. The Contractor shall make corrections required by Architect and shall resubmit as required by Architect the required number of corrected copies of shop drawings, product date, or new samples until approved. Contractor shall direct specific attention in writing or on resubmittals to revisions other than the corrections required by the Architect on previous submissions. Professional services required for more than two (2) re-reviews of required submittals of shop drawings, product data, or samples are subject to charge to the Contractor.

1.5 ELECTRONIC DATA TRANSFER

A. Requests for Electronic Data will be considered upon receipt of written request by the Contractor accompanied by a signed copy of the Electronic Data Request Form (included with this section). Request should clearly outline specific Drawings desired and the intent of the request.

1. Submit Electronic Data Request Form on standard form.
2. Allow 72 hours minimum for review and consideration by Architect.

B. Electronic data files are not a part of the contract documents, but rather a convenience for the Contractor in preparation of his required submittals and layout efforts. Electronic files do not alter the content or meaning of the hard copy documents which may be a part of the Contract Documents.

C. The electronic data files will remain the property of the Architect, shall not be used for any other purpose than that purpose stated in the Electronic Data Request Form, and shall not be released by the Contractor or any subcontractor to any other party without written consent from the Architect.

D. The electronic data files are distributed for reference only. Transferring such files can alter, delete or change original information. Accuracy of the data cannot be guaranteed

as correct or complete and the Contractor accepts full responsibility for inaccuracies, regardless of cause.

E. The hard copy documents, including addenda and subsequent written changes to the documents, represent the complete work of the Contract. Electronic files should be cross-referenced to the Contract Documents by the user and verified from that the information included contains the necessary Contract information. It is the Contractor's responsibility to make any changes or revisions to the electronic data files as necessary.

F. Architect may, at his complete discretion and without explanation, approve or deny requests for electronic data.

1.6 SUBSTITUTIONS

A. Architect's Approval Required:

1. Contract is based on materials, equipment and methods described in Contract Documents. Substitutions will not be reviewed and approved prior to the award of the contract.
2. Architect will consider proposals during the submittal process for substitution of materials, equipment and methods only when such proposals are accompanied by full and complete technical data and other information required by Architect to evaluate proposed substitution. Substitution shall be submitted with completed Substitution Request Form, included with this section.
3. Do not substitute materials, equipment or methods unless such substitution has been specifically approved for this work by Architect.

B. "Or Equal": Whenever, in Contract Documents, any material, process or specified patent or proprietary name and/or by name of manufacturer is indicated, such name shall be deemed to be used for purpose of facilitating description of material and/or process desired, and shall be deemed to be followed by the words "or equal" and Contractor may offer any material or process which shall be equal in every respect to that so indicated or specified; provided, however, that if material, process or article offered by Contractor is not, in opinion of Architect, equal in every respect to that specified, then Contractor shall furnish material, process or article specified or one that in opinion of Architect is equal thereof in every respect.

C. "No Substitutions": Items indicated as "No Substitutions" shall be provided as specified and no alternates will be allowed. These items are required either due to standards implemented by the Owner or to match materials recently installed by others.

D. Coordination: Approval of substitution shall not relieve Contractor from responsibility for compliance with requirements of Drawings and Project Manual, and Contractor shall be responsible at his own expense for any changes in other parts of its own work or work of others which may be caused by approved substitution.

E. DSA Approval: Substitutions of certain items may cause such items to require a Deferred Approval by DSA. Should a DSA Deferred Approval be required, the Contractor shall provide information and documents necessary to complete the Deferred Approval process without any additional costs to the Owner, including engineering, calculation and modification of substitute products.

PART 2 - SUBMITTALS

2.1 SUBCONTRACTOR LIST

A. Provide a typed list of Subcontractors within 5 days of notice of the award of contract. Include Subcontractor name, address, phone number, license number and trade.

2.2 PROGRESS SCHEDULE

A. Prepare and submit estimated progress schedule for work within 10 calendar days after issuance of Notice to Proceed. Submit up-dated schedules:

1. At mid-point of construction.
2. When time extensions of more than two weeks are necessary.

B. Relate progress Schedule to entire Project. Indicate following:

1. Dates for starting and completion of various sub-contracts.
2. Dates for submission of required submittals.

2.3 SCHEDULE OF VALUES

A. Before first Application for Payment, submit for Architect's approval a Schedule of Values of various portions of work, aggregating total Contract sum, divided so as to facilitate payment to subcontractors, prepared in such form as Architect and Contractor may agree upon, and supported by such data to substantiate its correctness as Architect may require.

1. Breakdown shall include separation of sitework from building work for main categories including electrical, plumbing, concrete, etc. Separations shall also be provided for each building of a multiple building contract. Include proper share of overhead and profit with each item in Schedule of Values.
2. This Schedule, when approved by Architect, shall be used as basis for Contractor's applications for payment. Payment will not be released until a Schedule of Values is accepted.

B. Schedule of Values shall appear similar to the following list and generally following the Table of Contents of this Project Manual as the format for listing component items. It shall be detailed at least as shown and portions shall not be more largely grouped so as to reduce its length unless appropriate to the scope of the Work. Mobilization/Start-up is limited to 2 percent on contracts greater than $1,000,000 and 4 percent on contracts less than $1,000,000. Contract closeout to be a minimum of 2 percent.

1. Mobilization/Start-up.
2. Temporary Facilities.
3. Concrete Reinforcement.
4. Caulking and Sealants.
5. Painting.
6. Shade Structure.

7. Signage.
8. Toilet Compartments.
9. Toilet Accessories.
10. Grading.
11. Paving.
12. Fencing and Gate.
13. Site Concrete.
14. Labor/Supervision.
15. Cleanup.
16. Contract Closeout.

2.4 SUBMITTAL SCHEDULE

A. Contractor shall prepare and submit to Architect a "Submittal Schedule" when required by the General Conditions showing scheduled dates of submittals and date required for return of submittals to Contractor.

B. Contractor shall provide in Schedule the minimum specified working days for Architect to review and check submittals provided it is not a deferred approval item. Based on the number and complexity of submittals at any one time, Architect's review period may be longer than the days specified.

C. Dates on "Submittal Schedule" shall be agreed upon by both Architect and Contractor.

2.5 PROJECT DIRECTORY

A. After execution of the Contract but prior to commencement of Work, Contractor shall submit to Architect a Project Directory listing subcontractors and vendors on the Project and giving a brief description of their scope of work, firm name, contact person, address, phone number, e-mail address, and fax number if used.

2.6 SHOP DRAWINGS

A. Submit shop drawings as a copy of the original set maintained by the Contractor. Shop drawings are to include the name of the project, the name of Contractor and are to be numbered consecutively. Provide legible and complete copies in every respect. Provide quantity as described below. Do not reproduce the Contract Drawings in lieu of Contractor or subcontractor produced shop drawings.

B. If shop drawings show variations from Contract requirements because of standard shop practice or other reason, make specific mention of such variations in letter of transmittal, as well as on Drawings, in order that (if acceptable) suitable action may be taken for proper adjustment of the Contract Documents. Unless specific changes have been noted and approved, no deviations from Contract Documents will be accepted.

2.7 PRODUCT DATA / MATERIAL LISTS

A. Manufacturer's Standard Schematic Drawings:

1. Modify Manufacturer’s drawings to delete information which is not applicable to the Project.
2. Supplement standard information to provide additional information which is applicable to the Project.

B. Manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations and other standard descriptive data.

1. Clearly mark each copy to identify pertinent materials, products or models. Mark out or remove extraneous information.
2. Show dimensions and clearances required.
3. Show performance characteristics and capacities.
4. Show wiring diagrams and controls.

2.8 SAMPLES

A. Samples: Physical examples to illustrate materials, equipment or workmanship, and to establish standards by which completed work is judged.

1. Include identification on samples including product and material and location of proposed work.

B. Samples shall be of sufficient size and quantity to clearly illustrate:

1. Functional characteristics of product or material, with integrally related parts and attachment devices.
2. After review, samples may be used in construction of project.

C. Field samples and mockups:

1. Erect at project site at location acceptable to Architect.
2. Construct each sample or mockup complete, including work of trades required in finished work.

2.9 REQUESTS FOR INFORMATION (RFI)

A. Requests for additional information (RFI's) beyond that set-forth in the Contract Documents will be considered when the request is in writing and fully documented. Requests shall state the source and reason for the request; identify specific references within the Contract Documents pertinent to the request; and supply supporting information to assist the Architect in his/her response. Verbal responses to such requests are to be considered informational; official response will only be given in writing.

1. Submit RFI's on standard form, included with this Section, and numbered consecutively.
2. Allow a minimum of 72-hours for review by Architect. Additional time may be required for more complex issues.
3. Provide suggested solution on standard RFI form where indicated.

4. Provide detailed cost estimate for RFI's that are anticipated to exceed $500 in extra costs to the Owner.

B. Because RFI's are used for clarification or Construction Document interpretation purposes, the response will be issued back to the Contractor in the space provided on the standard RFI form. More complex issues requiring Contract Document revisions and/or which may result in a change in cost to the Contract will be handled using a Construction Change Document (CCD). RFI's and CCD's will not be used to address simple or minor coordination or construction issues which can normally be addressed quickly and easily by the Contractor or in conjunction with the Contractor and Architect. RFI's deemed unnecessary or frivolous by the Architect will be returned to the Contractor for reconsideration or will be rejected. RFI's so returned shall be removed from the RFI log and noted as unnecessary.

2.10 CERTIFICATIONS

A. Where specifically indicated by pertinent Specification Sections, submit proper certification of recognized producer or association in lieu of or in addition to testing. Certification shall attest to product's compliance with requirements of Contract Documents.

B. Certifications for this project shall also include:

1. Certificate of Chlorination and Sterilization:
   a. Submit completed Certificate of Chlorination and Sterilization (included with this Section) with Local Jurisdiction approvals and Testing Agency reports attached, as specified in Divisions 22 and 33.
2. Certificate of Compliance for Building Materials:
   a. Submit completed Certification of Compliance for Building Materials (included with this section).
3. Roofing Certificate:
   a. Submit fully completed Roofing Certification (included with this Section).

2.11 MAINTENANCE / OPERATION MANUALS

A. General: Contractor shall incorporate in Maintenance/Operation Manual(s) brochures, manufacturer's catalogs and written instructions for equipment and materials needing regular care or maintenance. These items include carpets, resilient flooring, architectural finishes, mechanical and electrical equipment and other items as required elsewhere in Contract Documents. Prepare manuals in durable plastic loose leaf binders sized to accommodate 8-1/2 x 11 sheets with following minimum information:

1. Identification on or readable through, front cover stating general nature of manual.
2. Neatly typewritten index of contents.
3. Site plan and building plans indicating location of equipment referenced (reduced scale).
4. Complete instructions regarding operation and maintenance of equipment involved.

5. Complete nomenclature of replaceable parts, their part numbers, current cost and name and address of nearest vendor of parts.
6. Copy of warranties issued, in a separate binder as specified in this Section.
7. Copy of approved shop drawings (reduced scale) with data concerning changes made during construction.

B. Extraneous Data:

1. Where contents of manuals include manufacturer's catalog pages, clearly indicate precise items included in the Project installation and delete, or otherwise clearly indicate, manufacturer's data with which the Project installation is not concerned.

C. Materials shall be organized in a logical and consistent manner, by Specification Section number, with separating tabs clearly marked.

D. When submitting electronic file via Newforma, materials shall be organized in order ascending by Specification Section number and including clear separation within one pdf file, following format prescribed in paragraphs A and B of this Article.

2.12 WARRANTIES AND GUARANTEES

A. Contractor Standard Guarantee:

1. Furnish Owner with its Standard Guarantee for work executed under this Contract, including approved extra work, to be absolutely free of defects of workmanship and materials for a period of two (2) years from the date of filing of the Notice of Completion.
2. Under the terms of its warranty, Contractor shall guarantee to repair and make good defects and repair damage to other work caused thereby which may occur during the Warranty period at no cost to the Owner.
3. Guarantees and warranties between Contractor and manufacturers and between Contractor and suppliers shall not affect the Guarantee and Warranty between Contractor and Owner.
4. Contractor’s Standard Guarantee shall be submitted on the Guarantee/Warranty form included in Section 01 7836, Warranties.

B. Subcontractor Standard Guarantee:

1. Contractor shall countersign and furnish Owner with a Subcontractor Standard Guarantee from each Subcontractor for their work executed under this Contract, and approved extra work, to be free of defects of workmanship and materials for a period equal to the Contactor Standard Guarantee.
2. Under the terms of its warranty, Subcontractor shall guarantee to repair and make good defects and repair damage to other work caused thereby which may occur during the Warranty period at no cost to the Owner.
3. Subcontractors individual Standard Guarantee shall be submitted on Guarantee/Warranty form included in Section 01 7836, Warranties.

C. Special or Extended Guarantee/Warranty:

1. In addition to the Contractor's and Subcontractor's Standard Guarantees, furnish Owner with special or extended warranties in excess of the Standard Warranty term of the Contract where specified in the respective Sections of the Specifications.
2. Where special or extended guarantees are related to work of a Subcontractor, the written Guarantee/Warranty form prepared by the Contractor shall be co-signed by the respective responsible subcontractor and a separate and addition Guarantee/Warranty form shall be prepared by the Subcontractor and co-signed by the Contractor.
3. Each Special or Extended Guarantee/Warranty shall be submitted on the forms included in Section 01 7836, Warranties.

D. Provide a binder with the executed Guarantee/Warranty forms placed in the order in which they occur in the Project Manual. Include an Index listing each Specification Section, specific items covered and length of warranty for each item.

E. When submitting electronic file via Newforma, materials shall be organized in order ascending by Specification Section number and including clear separation within one pdf file.

2.13 RECORD DRAWINGS AND SPECIFICATIONS

A. The Contractor shall prepare and maintain on a current basis an accurate and complete set of Record Drawings and Annotated Specifications showing clearly the following:

1. Changes, revisions, and substitutions during construction, including, without limitation, field changes.
2. Addenda, Construction Change Documents and Clarifications issued by the Architect.
3. The final location of mechanical equipment, ducts, outlets, structural members, walls, partitions, and other significant features. Note both vertical and horizontal dimensions of concealed installations.
4. Installed locations of underground work and utilities, including storm drain piping, plumbing, electrical and stubs for future connections. Note both vertical and horizontal locations of underground facilities from permanent monuments such as building corners or other permanent structures, and finish grades.
5. In the event of a specification that allows Contractor to elect one of several brands, makes, or types of material or equipment, the annotations shall show which of the allowable items the Contractor has furnished.

B. The Contractor shall update the Record Drawings and Specifications as often as necessary to keep them current but no less often than weekly, and up-dated monthly, prior to and pursuant to approval of the progress payment application.

1. Record drawings and specifications are to remain on site and available for inspection by the District Representative, Project Inspector and the Architect.
2. Changes shall be made in an accurate and legible manner by a qualified draftsperson acceptable to Architect.

3. Symbols and designations used in preparing Record Drawings shall match those used in the Contract Drawings.

C. At project completion, the Record Drawings and Annotated Specifications shall be submitted by the Contractor for Owner's Project Inspector and Architect review and comment.

1. These will be returned to the Contractor for revisions. Once corrections have been completed the Inspector shall sign and date the record set coversheet noting it as acceptance of the completed Record Drawings and Specifications.
2. Prior to Application for Final Payment, the original Record Drawings and Specifications are to be resubmitted to the Architect along with a scanned electronic file set in PDF format with each drawing bookmarked, matching the Drawing titles.
3. When submitting electronic file via Newforma, materials shall be organized in order ascending by Sheet Number as shown on the Drawing Sheet Index within one pdf file.

D. Conditions of Payments:

1. At the end of each month the Project Inspector will review the record drawings and specifications. If the records are incomplete, or incorrect, an appropriate amount of dollars, equivalent to the cost of uncovering the work to determine the locations of piping and the like, may be deducted from the next progress payment. The deducted sum will be withheld until the record drawings are updated and/or corrected.
2. Written confirmation from the District Representative that the record drawings and specifications have been properly updated weekly shall be submitted with each pay application request, and the existence of such properly updated records shall be a condition precedent to payment.
3. On completion of the Contractor's portion of the Work and prior to Application for Final Payment, the Contractor shall provide one complete set of approved Record Drawings and Specifications to the Owner, in format as specified, certifying them to be a complete and accurate reflection of the actual construction conditions of the Work. Delays in the submission of complete record documents may subject the Contractor to liquidated damages.

2.14 EXTRA STOCK

A. Provide extra stock and materials, as described in the individual Specification Sections, to the Owner at time of final acceptance.

B. Materials shall be inventoried in writing, neatly packaged, with labels clearly identifying contents and quantities.

C. Contractor shall obtain written acceptance of delivery from Owner.

PART 3 - EXECUTION

3.1 GENERAL SUBMISSION REQUIREMENTS

A. This project is using Newforma Info Exchange for transmission and processing of project documentation. The Contractor is responsible for making contract submissions through this web accessed system. No supplementary software is required for use. User names and passwords will be granted at the beginning of the project.

B. Contractor is responsible for the scheduling of submittals in order to avoid detrimental impact to the construction schedule and to support the timely sequence of the Work.

1. Allow a minimum of 15-working days for submittal review by the Architect. Complex submittals or submittals which are not provided as complete packages may take longer than 15-working days for review.
2. Contractor shall allow time for potential rejection and re-submittal of submittals which are being offered as substitution to the specified products.

C. Contractor shall review submittals for completeness, coordination and conflicts between subcontractors and other Work in the Contract Documents.

1. Subcontractors shall make submittals to Contractor.
2. Submittals made by subcontractors which are not thoroughly reviewed by the Contractor will be returned. Submittals which vary significantly from the Contract Documents and are not so identified prior to submission, will be returned to the Contractor without review.

D. Mechanical and electrical submittals, excluding underground work, shall each be packaged together so that products/components for these two major disciplines are transmitted to the Architect as a single submittal package for review.

E. Submittals shall be accompanied by Submittal Transmittal, included at the end of this Section, addressed to the Architect. Each submittal transmittal shall:

1. Be consecutively numbered.
2. Re-submittals to have same submittal number as the original submittal with an alphanumeric suffix.
3. Indicate Specification Section number. Separate submittals are required for each Specification Section involved.
4. Include proper number of copies, as required in “Number of Copies Required” below.
5. Contain index of items submitted, properly identified with Drawing numbers, etc.
6. Substitutions shall be accompanied by a completed Substitution Request Form (included with the Project Manual).

F. Electronic Submittals.

1. Product data submitted electronically shall be submitted in .pdf format. Submittals shall be organized in a logical format grouping items and subsections together. The first page of each item or subsection must be bookmarked and properly

labeled. If multiple fixtures or products are included in a single submittal, each item and corresponding information shall be separately grouped and bookmarked as noted above. This formatting and bookmarking shall also apply to other data submitted electronically like warranties/guarantees, maintenance & operations manuals and certifications.

2. Shop drawings submitted electronically shall be submitted in .pdf format. Shop drawings shall be organized in a logical format grouping sections together (plans, elevations, details, schedules, etc.). Each sheet of the shop drawings shall be bookmarked and properly labeled. Plan references and detail callouts shall be hyperlinked to properly jump to the referenced page or detail.

G. Number of Copies Required - Contractor shall submit following number of copies:

1. Subcontractor List: 1-electronic copy in PDF format.
2. Progress Schedule: 1-electronic copy in PDF format.
3. Schedule of Values: 1-electronic copy in PDF format.
4. Shop Drawings: 1-electronic copy in PDF format.
5. Product Data/Material Lists: 1-electronic copy in PDF format.
6. Samples: As specifically indicated in the respective Specification Section or, if not indicated, two more than the Contractor requires to be returned.
7. Samples for Color/Pattern Selection: One set of manufacturer's complete range for initial selection; and 4 samples as requested of selected color/pattern for inclusion in final color boards.
    a. As color selection is dependent on multiple submittals, it is critical that items requiring color decisions be submitted as early as possible and at the same time.
    b. Selections will not be finalized until color dependent/selection submittals are received.
8. Substitution Request: 1-electronic copy in PDF format.
9. Request for Information: 1-electronic copy in PDF format.
10. Electronic Transfer: 1-electronic copy in PDF format.
11. Certifications: 1-electronic copy in PDF format.
12. Maintenance/Operations Manuals: After approved via Newforma submittal, 1-hard copy plus 1-electronic copy in format acceptable to the Owner.
13. Guarantees/Warranties: After approved via Newforma submittal, 1-hard copy, plus 1-electronic copy in format acceptable to the Owner. Refer to Section 01 7836, Warranties, for forms and additional requirements for assembly of guarantees/warranties.
14. Record Drawings: After approved via Newforma submittal, 1-hard copy plus 1-electronic copy in format acceptable to the Owner.

H. Submittals shall include the following, as applicable:

1. Date and revision dates.
2. Project title and number.
3. The names of Architect, Contractor, Subcontractor and supplier or manufacturer.

4. Identification of product or material.
5. Relation to adjacent structure or material.
6. Field dimensions, clearly identified as such.
7. Specification section number.
8. A blank space for Architect's stamp.
9. Contractor's stamp on each, initialed or signed, certifying that submittal was reviewed, field measurements have been verified and submittal is in compliance with the applicable Specification Section and the overall Contract Documents.

I. Incomplete, inaccurate or non-complying submittals requiring revisions, re-submittal and additional review time, shall not be considered as a basis for Contract time extension.

3.2 PROCEDURES FOR ACTION SUBMITTALS

A. Action Submittals are identified in the respective Specification Section and shall be submitted in accordance with the specified web based access system.

B. Number of Copies: As specified under Article “General Submission Requirements.”

C. Architect's Review:

1. General:
   a. Except for finish, color, and other aesthetic matters left to Architect's decision by Contract Documents, Architect's review is only for Contractor's convenience in following work and does not relieve Contractor from responsibility for deviations from requirements of Contract Documents.
   b. Do not construe Architect's review as a complete check or relief from responsibility for errors or omissions of any sort in shop drawings or schedules or from necessity of furnishing work required by Contract Documents that may not have been shown on shop drawings.
   c. Architect's review of a separate item does not indicate review of complete assembly in which it functions.
   d. Review comments of the Architect (or its consultants) will be shown when it is returned to the Contractor. The Contractor shall make and distribute such copies as are required for its purposes.

D. Processing:

1. Architect will review Action Submittals in accordance with agreed upon "Submittal Schedule" and will return them to Contractor with Architect's stamp.
2. Notations by Architect which increase Contract cost or time of completion shall be brought to Architect's attention before proceeding with work. Failure to do so will result in the increased costs being borne by the Contractor.
3. Each submittal will be stamped indicating appropriate action to be taken by the Contractor.
4. If for any reason the Contractor cannot comply with the notations, Contractor shall re-submit submittal. In the transmittal letter accompanying the re-submittal, clearly describe the reason(s) for not being able to comply with the notations.

E. Action and Distribution:

1. Architect will stamp submittals and Contractor shall comply with action noted on the Architect's "Submittal Review" stamp.
2. Unless otherwise directed for mutually agreed or required by the Architect's stamp, Architect will return submittals to the Contractor via the specified web access system.
3. If corrections are required, the Contractor is responsible for making the necessary corrections and re-submitting the shop drawings in a timely fashion as to not affect the project schedule.
4. The Contractor shall secure final acceptance prior to commencing work involved.

F. Consultants' Review:

1. Submittals requiring review by Architect's or Owner's consultants shall be uploaded to the specified web access system for distribution by the Architect.
2. Processing shall be in accordance with consultants stamp.
   a. If action required by consultants stamp is not clear, Contractor shall immediately notify the Architect for a clarification.
   b. If returned submittal also includes the Architect's stamp, processing shall be in accordance with the Architect's stamp.

G. Revisions:

1. If revisions are required, the Contractor is responsible for making the necessary changes pertinent to by comments noted on the submittal and re-submitting the shop drawings in a timely fashion as to not affect the project schedule.
2. If the Contractor considers any required revision to be a change, they shall so notify the Architect.
3. Show each revision by number, date, and subject in a revision block on the submittal.
4. If for any reason Contractor cannot comply with the notations, Contractor shall resubmit submittal.

H. Revisions after Review: When a submittal has been reviewed by the Architect, resubmittal for substitution of materials or equipment will not be considered unless accompanied by an acceptable explanation as to why the substitution is necessary.

3.3 PROCEDURES FOR INFORMATIONAL SUBMITTALS

A. Informational Submittals are identified in the respective Specification Section and shall be submitted in accordance with the specified web based access system.

B. Number of Copies: As specified under Article "General Submission Requirements."

C. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

D. Test and Inspection Reports: Comply with requirements specified in Section 01 4523, Testing and Inspection Services.

3.4 PROCEDURES FOR CLOSEOUT AND MAINTENANCE MATERIAL SUBMITTALS

A. Closeout and maintenance material submittals are identified in the respective Specification Section and shall be submitted as specified or, if not specified, in accordance instructions provided by the Architect.

B. Comply with the additional requirements specified in Section 01 7700, Closeout Procedures.

3.5 FORMS

A. The following submittal forms are included as part of this Section.

1. Submittal Transmittal.
2. Substitution Request.
3. Request for Information.
4. Electronic Data Request.
5. Certification of Chlorination and Sterilization.
6. Certification of Compliance for Building Materials.
7. Roofing Certification.

END OF SECTION

Lunch Shelters
Lodi Unified School District

SUBMITTAL NO.: _____

Architect's Project # 22-1551.00

DATE: _____

DSA File/Appl. # XX-XX/XX-XXXXXX

Re-Submittal of Original No.: _____

1. SUBMITTAL TRANSMITTAL

Attention: Jennifer Huang

rga + A studio of HMC Architects

Contractor: Company

Contact: Name

Sub Contractor:

Contact: _____

Please submit only one trade per submittal! **Description of submitted materials:**

Quantity submitted	Specification Section		Description of contents (e.g. product data, shop drawings, samples)
	Section #	Section Title	

Contractor Statement: (read and acknowledge)
This submittal has been reviewed and approved with respect to the means, methods, techniques, and procedures of construction, safety precautions, and program incidentals thereto. This submittal complies with the contract documents and comprises no variations thereto, unless accompanied by a substitution request.

By: _____ **Date**: _____
Name

2. RE-TRANSMITTAL TO CONTRACTOR:

Distribution: Contractor, Owner, Project Inspector, RGA, Other

- ☐ NO EXCEPTIONS TAKEN
- ☐ SUBMIT SPECIFIED ITEM
- ☐ REJECTED
- ☐ REVISE AND RESUBMIT
- ☐ FURNISH AS CORRECTED
- ☐ NO ACTION REQUIRED

Corrections or comments made on the shop drawings during this review do not relieve the Contractor from compliance with requirements of the Drawings and Specifications. This general check is only for the review of 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 all quantities and dimensions, selecting fabrication processes and techniques of construction, coordinating his work with that of all the other trades, and performing his work in a safe and satisfactory manner.

Rainforth Grau Architects By: _____ Date: _____

Additional Comments:

See Specification Section 01 3300 for use of this form

Lunch Shelters
Lodi Unified School District

SUBSTITUTION REQUEST NO.: ☐

Architect's Project # 22-1551.00
DSA File/Appl. # XX-XX/XX-XXXXXX

Date: _____

1. SUBSTITUTION REQUEST

Attention: Jennifer Huang

Contractor: Company

Contact: Name

Please submit only one product per request!

Include with a specified product Submittal

Sub Contractor:

Contact: _____

2. PROPOSED SUBSTITUTIONS: The undersigned requests consideration of the following substitution:

Specified Item: _____ **Page No.:** _____ **Paragraph No.:** _____

Proposed Item: _____

3. REASON FOR REQUEST:

4. REQUIREMENTS FOR SUBSTITUTIONS:

Attached data includes product description, specifications, drawings, photographs, performance and test data adequate for evaluation of request; applicable portions of data are clearly identified. Attached data also includes a description of changes to Contract Documents, which proposed substitution will require for its proper installation.

The undersigned certifies that the following paragraphs, unless modified by attachments, are correct:

1. The proposed substitution does not affect dimensions shown on drawings and does not require design changes in the Contract Documents.
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 the work, the schedule or specified warranty requirements.
4. Maintenance and service parts will be readily available for the proposed substitution.

The undersigned further states that the function, appearance and quality of the proposed substitution are equivalent or superior to the specified item.

_____ _____

Signature - Contractor/Subcontractor Date

5. TRANSMITTAL TO CONTRACTOR:

Distribution: Contractor, Owner, Project Inspector, RGA, Other

☐ **ACCEPTED** ☐ **ACCEPTED AS NOTED** ☐ **REJECTED**

Rainforth Grau Architects By: _____ Date: _____

Comments:

Lunch Shelters
Lodi Unified School District

RFI NO.: ☐

Architect's Project # 22-1551.00
DSA File/Appl. # XX-XX/XX-XXXXXX

Date: _____

1. REQUEST FOR INFORMATION

Attention: Jennifer Huang

From: Contractor: Company
Contact: Name
Sub Contractor: _____
Contact: _____

Identify related specific references within the Contract Documents and supporting information:

Dwg./Document No.: _____

Building/Site Location: _____

2. Existing Condition (source / reason for the request):

3. Recommended Contractor Action(s) for resolution:

4. Project Inspector Acknowledgment:

Date Reviewed: _____

5. Owner / A/E Resolution(s):

Date of Response: _____ By: _____

Attachments: _____

Extra Work Involved in the Above Described Change? *Yes* ☐ *No* ☐

Distribution: Contractor, Owner, Project Inspector, RGA, Other
See Specification Section 01300 for use of this form

Lunch Shelters
Lodi Unified School District

E-DATA REQUEST NO.: _____

Architect's Project # 22-1551.00
DSA File/Appl. # XX-XX/XX-XXXXXX

Date: _____

1. ELECTRONIC DATA REQUEST

Attention: Jennifer Huang

From: Contractor: Company
Contact: Name
Sub Contractor:
Contact: _____

2. DATA REQUESTED - Provide list of specific drawings requested (include sheet numbers):

3. REASON FOR REQUEST - Provide clear explanation of why information is desired and for what purpose it will be utilized:

4. ACKNOWLEDGEMENT OF RESPONSIBILITY:

The electronic data files requested are distributed for reference only. Transferring such files can alter, delete or change original information. Accuracy of the data cannot be guaranteed as correct or complete and the Contractor accepts full responsibility for any and all inaccuracies, regardless of cause.

The hard copy documents, including addenda and subsequent written changes to the documents, represent the complete work of the contract and all electronic files should be cross-referenced and verified from that information as electronic files may not contain all contract information. It is the Contractor's responsibility to make any changes or revisions necessary.

This electronic data is furnished without guarantee of compatibility with your hardware or software. It is the Contractor's responsibility to notify the Architect in the event a compatibility problem or disk defect is encountered and a replacement disk is necessary.

This electronic data, in its present form, remains the property of Rainforth Grau Architects and shall not be used for any other purpose than to provide background information for the project noted above. It is not to be released to any other party without the written consent of Rainforth Grau Architects.

Accepted by: _____
Signature - Contractor/Subcontractor

Representing: _____
Contractor/Subcontractor Company Name

CERTIFICATION OF CHLORINATION AND STERILIZATION

This certifies that _____ chlorinated the domestic hot and cold water plumbing lines for the **Lunch Shelter**, **Lodi Unified** School District. The lines were first flushed and chlorine was injected in the main water line on _____ , **[year]**. A minimum chlorine residual of 50 ppm was measured at each outlet. The lines were tagged, secured and the make-up water was shut off. On _____ , **[year]**, (a minimum of 24 hours later) the chlorine residual was retested and found to contain a minimum of 50 ppm. The plumbing lines were then thoroughly flushed with fresh water until the chlorine residual was not greater than 0.2 ppm at all outlets. A Bacteriological Examination report has been provided.

District Inspector Signature: _____

Date _____

Name of Chlorination and Testing Firm: _____

Authorized Representative Signature: _____

Date _____

Name of General Contractor: _____

Authorized Representative Signature: _____

Date _____

CERTIFICATION OF COMPLIANCE FOR BUILDING MATERIALS

This is to certify, in accordance with the Environmental Protection Agency requirements, that the materials and equipment used in the construction of the **Lunch Shelter** for **Lodi Unified** School District of **San Joaquin** County, California, are asbestos free and are, therefore, not subject to monitoring for asbestos contamination.

Project Name: _____

Address: _____

Contractor: _____

Address: _____

Signature: _____

Title: _____

Date: _____

SEPARATE CERTIFICATE IS REQUIRED FOR EACH SITE

ROOFING CERTIFICATION

This is to certify that a representative of the manufacturer has visited the site prior to installation, inspected the surfaces which the roofing is applied and accepted those surfaces.

In addition, a representative of the manufacturer has inspected the materials and methods used, verified they are in accordance with the manufacturer's recommendations, and accepts the final installation.

A guarantee for materials and workmanship is to be provided separately.

Project name: _____

Address: _____

_____

General Contractor: _____

Roofing Contractor: _____

Scope of Work/Roofing Type: _____

Roofing Manufacturer: _____

Manufacturer's Representative: _____

Representative's Signature: _____

Date: _____

A SEPARATE CERTIFICATE IS REQUIRED FOR EACH SITE AND FOR EACH ROOFING TYPE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Alteration requirements for modernizations, remodels, and additions.

1.2 RELATED REQUIREMENTS

A. Section 01 1100, Summary of Work.

B. Section 01 7329, Cutting and Patching.

1.3 REFERENCES AND STANDARDS

A. California Building Code (CBC), edition as noted on the drawings, as adopted by the California Division of the State Architect (DSA).

B. California Green Building Standards Code (CALGreen), edition as noted on the Drawings, as adopted by the California Division of the State Architect (DSA).

1.4 ADMINISTRATIVE REQUIREMENTS

A. Coordination:

1. Contractor to coordinate and conduct a meeting with the demolition contractor to verify which systems, if any, are to be protected and maintained. Such systems shall be clearly identified and marked to avoid unnecessary damage or removal.
2. Coordinate work of alterations and renovations to expedite completion sequentially and to accommodate Owner occupancy.

1.5 QUALITY ASSURANCE

A. Manufacturer and Installer Qualifications: As specified in the product specifications.

B. Use only new materials and products, unless existing materials or products are specifically shown otherwise on the Drawings to be salvaged and re-used.

C. Single Source Responsibility: Use materials and products of one manufacturer whenever possible.

D. All materials, components, assemblies, workmanship and installation are to be observed by the Owner's Inspector of Record. Work not so inspected is subject to uncovering and replacement.

1.6 FIELD CONDITIONS

A. Make and be responsible for all field dimensions necessary for proper fitting and completion of work. Report discrepancies to Architect before proceeding.

PART 2 - PRODUCTS

2.1 PRODUCTS FOR PATCHING AND EXTENDING WORK

A. New Materials: As specified in product Sections; match existing products and work for patching and extending work.

B. Type and Quality of Existing Products: Determine by inspection and testing products where necessary, referring to existing work as a standard.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that demolition is complete and areas are ready for installation of new work.

B. Inspect conditions of uncovered work affecting installation of products or performance work.

C. Verify that specified items may be installed in accordance with the approved design.

D. Beginning of restoration work means acceptance of existing conditions.

E. In event of discrepancy, immediately notify Architect. Do not proceed in discrepant areas until discrepancies have been fully resolved.

3.2 PREPARATION

A. Close openings in exterior surfaces to protect existing work and salvage items for weather and extremes of temperature and humidity. Insulate ductwork and piping to prevent condensation in exposed areas.

B. Cut, move or remove items as necessary for access to alterations and renovation work.

C. Remove debris and abandoned items from area and from concealed spaces.

D. Remove unsuitable material not marked for salvage, such as rotted wood, corroded metals, and deteriorated masonry and concrete.

E. Prepare surface, and remove surface finishes to provide for proper installation of new work and finishes including blocking, framing, insulation, etc.

F. Replace materials as specified for finished work.

3.3 INSTALLATION

A. Remove, cut and patch work in a manner to minimize damage and to provide a means of restoring products and finishes to original condition, and installation of concealed work, as specified in Section 01 7329, Cutting and Patching,

B. Refinish visible existing surfaces to remain in renovated rooms and spaces, to specified condition for each material, with a neat transition to adjacent finishes.

C. Install products as specified in individual specifications Sections.

D. Where materials or equipment are removed, but no new finish is scheduled, patch and repair any damage to match existing wall surface.

3.4 TRANSITIONS

A. Where new work abuts or aligns with existing, perform a smooth and even transition. Patched work is to match existing adjacent work in texture and appearance.

B. When finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural point of division and make recommendation to Architect.

3.5 ADJUSTMENTS

A. Where removal of partitions or walls results in adjacent spaces becoming one, rework floors, walls and ceilings to a smooth plane without breaks, steps or bulkheads.

B. Where a change of plane of 1/8" or more occurs, submit recommendation for providing a smooth transition for Architect review.

C. Trim existing doors as necessary to clear new floor finish. Refinish trim as required.

D. Fit work at penetrations of surfaces as specified in Section 01 7329.

3.6 FINISHES

A. Finish surfaces as specified in individual Product Sections.

B. Finish patches to produce uniform finish and texture over entire area. When finish cannot be matched, refinish entire surface to nearest intersections.

3.7 REPAIR OF DAMAGED SURFACES

A. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections.

B. Repair substrate prior to patching finish.

C. In the event of damage, make all repairs and replacements necessary to the approval of the Architect at no additional cost to the Owner.

3.8 CLEANING

A. Upon completion of installation, remove manufacturer's temporary labels and marks of identification. Thoroughly clean surfaces and remove foreign material. Leave entire work in neat, orderly, clean and acceptable condition.

3.9 PROTECTION

A. Protect work and materials of this Section prior to and during installation, and protect the installed work and materials of other trades.

B. Exposed finishes shall be free from scratches, dents, permanent discolorations and other defects in workmanship or material.

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Special environmental, sustainable, and “green” building practices related to indoor air quality, resource efficiency supplementing the Pollutant Control requirements specified under Section 01 8113.10, Sustainable Design Requirements, and to ensure healthy indoor air quality in final Project.

B. Contractor is required to comply with sustainable building practices during construction and when considering materials for substitutions. Refer to Article “Design Requirements.”

1.2 RELATED REQUIREMENTS

A. Section 01 6116, Volatile Organic Compound (VOC) Restrictions.

B. Section 01 7419, Construction Waste Management and Disposal.

1.3 ADMINISTRATIVE REQUIREMENTS

A. Submittal Procedures:

1. Informational Submittals shall be submitted in accordance with Section 01 3300, Submittal Procedures.
2. Sustainable Design Submittals shall comply with the additional requirement of Section 01 8113, Sustainable Design Requirements.
3. Closeout Submittals shall be submitted in accordance with Section 01 7700, Closeout Procedures.

1.4 DESIGN REQUIREMENTS

A. Owner has established general environmental goals for design and for construction of the Project.

1. In addition to the Contractor, the Contractor’s construction team, including subcontractors, suppliers, and manufacturers, are encouraged to participate where possible to realize the Owner’s environmental goals.
2. Intent is for environmental goals to be achieved in a manner which ultimately provides a safe and healthy environment for building occupants with minimal impact on the local, regional and global environment.

B. Environmental Goals:

1. Refer to specific Specifications Sections for more detailed construction requirements related to specific materials and systems.

1.5 INFORMATIONAL SUBMITTALS

A. Indoor Air Quality (IAQ) Data:

1. Environmental Issues: Submit emission test data produced by acceptable testing laboratory, listed in this Specification Article "Quality Assurance," for materials as required in each specific Specification Section.
    a. Laboratory reports shall contain emissions test data on Volatile Organic Compounds (VOCs) including Total Volatile Organic Compounds (TVOC), specific individual VOCs, formaldehyde and other aldehydes as described in this Section.
    b. Identify VOCs emitted by each material as required in these Specifications, and demonstrate compliance with the California Green Building Standards Code, edition current as of the date of this Contract.
    c. Specific test conditions and requirements are set forth in the Specifications. For required tests, submit documentation of sample acquisition, handling, and test specimen preparation, as well as test conditions, methods, and procedures. The tests consist of a 10-day conditioning period followed by a 96-hour test period.
        1) Samples collected during the test period at 24, 48, and 96-hours shall be analyzed for TVOC and formaldehyde.
        2) VOC samples collected at 96 hours shall be identified and quantified for compounds that are found on the list of Chemicals of Concern. The Chemicals of Concern list is based on the California OEHHA list as of September 2002 (The most recent list shall be used for this Specification as published at:
            a) http://www.oehha.org/air/chronic_rels/allChrels.html.
2. Cleaning and Maintenance Products: Provide data on manufacturers' recommended maintenance, cleaning, refinishing and disposal procedures for materials and products. These procedures are for final Contractor cleaning of the project prior to Substantial Completion and for provided materials and products as required by the specific Specification Sections.
    a. Where chemical products are recommended for these procedures, provide documentation to indicate that no component present in the cleaning product at more than 1 percent of the total mass of the cleaning product is a carcinogen or reproductive toxicant as identified in the Chemicals of Concern list referenced above.
    b. Avoid cleaning products containing alpha-pinene, d-limonene or other unsaturated carbon double bond alkenes due to chemical reactions with ozone to form aldehydes, acidic aerosols, and ultra-fine particulate matter in indoor air.

B. Certificates:

1. Prior to Final Completion, submit a certificate signed by corporate office holder of Contractor, subcontractor, supplier, vendor, installer or manufacturer primarily responsible for the manufacturing of the product, indicating materials provided are

essentially the same, and contain essentially the same components as products and materials tested.

2. Comply with requirements specified in Specification Section 01 7700, Closeout Procedures.

1.6 CLOSEOUT SUBMITTALS

A. Submit data relating to Environmental Issues.

1. Submit environmental product certifications, in two forms:
   a. Two CD-ROMs organized by CSI Division Format.
   b. Three three-ring binders organized by CSI Division Format with Table of Contents and with dividers for each Division.

1.7 QUALITY ASSURANCE

A. Environmental Project Management and Coordination: Contractor to identify one person on Contractor's staff to be responsible for environmental issues compliance and coordination.

1. Experience: Environmental project manager shall have experience relating to sustainable building construction.
2. Responsibilities: Carefully review the Contract Documents for environmental issues, coordinate work of trades, subcontractors, and suppliers; instruct workers relating to environmental issues; and oversee Project Environmental Goals.
3. Meetings: Discuss Environmental Goals at following meetings.
   a. Pre-construction meeting.
   b. Pre-installation meetings.
   c. Regularly scheduled job-site meetings.
   d. Special sustainability issues meetings.

B. Environmental Issues Criteria: Comply with requirements listed in the Specification Sections.

C. Acceptable Indoor Air Emissions Testing Laboratories:

1. Selection of testing laboratories shall include assessment of prior experience in conducting indoor source emissions tests.
2. The proposed laboratory shall be an independent company or organization not related to the manufacturer of the products to be tested.
3. Submit documentation on proposed laboratory for review and approval by Owner.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Packaging: Deliver materials in recyclable or in reusable packaging such as cardboard, wood, paper, or reusable blankets, which will be reclaimed by supplier or manufacturer for recycling.

1. Minimize packaging materials to maximum extent possible while still ensuring protection of materials during delivery, storage, and handling.
2. Unacceptable Packaging Materials: Polyurethane, polyisocyanate, polystyrene, polyethylene, and similar plastic materials such as “foam” plastics and “shrink-fit” plastics.
3. Reusable Blankets: Deliver and store materials in reusable blankets and mats reclaimed by the manufacturers or suppliers for reuse where the reclamation program exists or where a program can be developed for such reuse.
4. Pallets: Where pallets are used, suppliers shall be responsible to ensure pallets are removed from site for reuse or for recycling.
5. Corrugated Cardboard and Paper: Where paper products are used, recycle as part of the construction waste management recycling program, or return to the material’s manufacturer for use by the manufacturer or supplier.
6. Sealants, Paint, Primers, Adhesives, and Coating Containers: Return to the supplier or manufacturer for reuse where such program is available.

B. Comply with the additional requirements specified in Section 01 7419, Construction Waste Management and Disposal.

1.9 FIELD CONDITIONS

A. No smoking will be permitted in indoor Project site locations, in accordance with California Labor Code (Section 400-6413.5).

B. Environmental Product Certification:

1. Include certification that indicates cleaning materials comply with requirements of these Specifications.

C. Construction Ventilation and Preconditioning:

1. Temporary Construction Ventilation: Maintain sufficient temporary ventilation of areas where materials are being used that emit VOCs. Maintain ventilation continuously during installation, and until emissions dissipate following installation. If continuous ventilation is not possible utilizing the building’s HVAC system(s) then ventilation shall be supplied using open windows and temporary fans, sufficient to provide no less than three air changes per hour.
   a. Period after installation shall be sufficient to dissipate odors and elevated concentrations of VOCs. Where no specific period is stated in these Specifications, a time period of 72 hours shall be used.
   b. Ventilate areas directly to outside; ventilation to other enclosed areas is not acceptable.
2. During dust producing activities, including drywall installation and finishing, turn ventilation system off, and openings in supply and return HVAC system shall be protected from dust infiltration. Provide temporary ventilation as required.
3. Preconditioning: Prior to installation, allow products which have odors and significant VOC emissions to off-gas in dry, well-ventilated space for 14 calendar days to allow for reasonable dissipation of odors and emissions prior to delivery to Project site and installation.

a. Condition products without containers and packaging to maximize off-gassing of VOCs

b. Condition products in ventilated warehouse or other building. Comply with substitution requirements for consideration of other locations.

D. Protection:

1. Moisture Stains: Materials with evidence of moisture damage, including stains, are not acceptable, including both stored and installed materials; immediately remove from site and properly dispose.

a. Take special care to prevent an accumulation of moisture on installed materials and within packaging during delivery, storage, and handling to prevent development of molds and mildew on packaging and on products

b. Immediately remove from site and properly dispose of materials showing signs of mold and signs of mildew, including materials with moisture stains.

c. Replace moldy materials with new, undamaged materials.

2. Ducts: Seal ducts during transportation, delivery, and construction to prevent accumulation of construction dust and construction debris inside of ducts.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. Requests for substitutions shall comply with requirements specified in Specification Section 01 3300, Submittals, and with the following additional information required where environmental issues are specified:

1. Indicate how each proposed substitution complies with requirements for VOCs.
2. Owner, in consultation with Architect reserve the right to reject proposed substitutions where data for VOCs is not provided or where emissions of individual VOCs are higher than for the specified materials.
3. Comply with the specified recycled content and other environmental requirements.

PART 3 - EXECUTION

3.1 FIELD QUALITY CONTROL

A. Sequencing:

1. On-Site Application: Where odorous and/or high VOC emitting products are applied on-site, apply prior to installation of porous and fibrous materials. Where this is not possible, protect porous materials with polyethylene vapor retarders.
2. Complete interior finish material installation no less than 14 days prior to Substantial Completion to allow for Building Flush Out as described in Paragraph 3.1B.

3.2 CLEANING

A. Clean interior and exterior surfaces exposed to view; remove temporary labels, stains, and foreign substances; polish transparent and glossy surfaces using cleaning and maintenance products that conform to standards as described in Part 1 of this Section.

B. Clean equipment and fixtures to sanitary condition using cleaning and maintenance products that conform to standards as described in Part 1 of this Section.

C. Products used for cleaning shall comply with Proposition 65 and the additional restrictions for volatile organic compounds specified in Section 01 6116.

D. If ducts were not sealed during construction, and contain dust or dirt, clean ducts using HEPA vacuum immediately prior to Substantial Completion and prior to using ducts to circulate air. Oil film on sheet metal shall be removed before shipment to site. Ducts shall be inspected to confirm that no oil film is present. Remove oil film.

E. Replace air filters, both pre and final filters, just prior to Substantial Completion.

F. Remove and properly dispose of recyclable materials using construction waste management program described in Section 01 7419, Construction Waste Management and Disposal.

3.3 PROTECTION

A. Protect interior materials from water intrusion or penetration where interior products are not intended for wet applications and are exposed to moisture.

B. Protect installed products using methods that do not support growth of mold and mildew.

1. Immediately remove from site materials with mold or mildew.

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Standard reference abbreviations use in the Project Manual.
2. Requirements for standard references use in the various Specification Sections.

1.2 STANDARD SPECIFICATIONS

A. The contract Documents contain references to various standard specifications, codes, practices, and requirements for materials, work quality, installation, inspections and tests published and issued by the organizations, societies, and associations. Such references are hereby made part of the Contract Documents to the extent required.

B. When standard specifications are included by abbreviation and number only, it is assumed that the Contractor is familiar with and has ready access to the specified standards.

C. When the effective date of a reference standard is not given, it shall be understood that the current edition or latest revision thereof and any amendments or supplements thereto in effect on the date of original issue of these Contract Documents, as indicated on the cover, shall govern the Work.

D. Reference standards are not furnished with the contract Documents, because the Contractor, subcontractors, manufacturers, suppliers, and the trades involved are assumed to be familiar with their requirements

E. Contractor shall obtain its own copies of required specified referenced publications.

F. The specification or standard referred to shall have full force and effect as though printed in these specifications.

G. In addition to those standards specifically referenced in the Specifications, comply with the accepted industry standards and trade association recommendations for the respective portions of Work.

H. In the case of difference between referenced standards and the Contract Documents, the most stringent requirements prevail.

1.3 STANDARD SPECIFICATION ABBREVIATIONS

A. In addition to abbreviations indicated on the Drawings, references in the Project Manual to trade associations, technical societies, recognized authorities, and other institutions may include the following organizations, which are sometimes referred to by only the corresponding abbreviations. Not all abbreviations are listed, and not all listed abbreviations are used.

B. Initialisms and Acronyms:

1.	AA	Aluminum Association
2.	AAMA	American Architectural Manufacturers Association
3.	AASHTO	American Association of State Highway and Transportation Officials
4.	AATCC	American Association of Textile Chemists and Colorists
5.	ABAA	Air Barrier Association of America
6.	ACI	American Concrete Institute
7.	ACS	Access Compliance Section (DSA)
8.	ACSE	American Society of Civil Engineers
9.	ADA	American with Disabilities Act
10.	AGA	American Galvanizers Association
11.	AIA	American Insurance Association (successor to NBFU)
12.	AISC	American Institute of Steel Construction
13.	AISI	American Iron and Steel Institute
14.	AITC	American Institute of Timber Construction
15.	ALSC	American Lumber Standards Committee
16.	ANSI	American National Standards Institute
17.	APA	The Engineered Wood Association
18.	ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning
19.	ASTM	ASTM International
20.	AWI	Architectural Woodwork Institute
21.	AWPA	American Wood Protection Association
22.	AWS	American Welding Society
23.	BHMA	Builders Hardware Manufactures Association
24.	CALGreen	California Green Building Standards Code
25.	CBC	California Building Code
26.	CEC	California Electrical Code
27.	CFC	California Fire Code
28.	CLFMI	Chain Link Fence Manufacturing Institute
29.	CMC	California Mechanical Code
30.	CPC	California Plumbing Code
31.	CRA	California Redwood Association
32.	CRI	Carpet and Rug Institute
33.	CRSI	Concrete Reinforcing Steel Institute
34.	CS	Commercial Standard of National Bureau of Standards (US Dept of Commerce)
35.	DHI	Door and Hardware Institute
36.	DSA	Division of the State Architect
37.	DTSC	Department of Toxic Substances Control
38.	EPA	Environmental Protection Agency
39.	FDA	U.S. Food and Drug Administration

40.	FLS	Fire & Life Safety (DSA)
41.	FM	Factory Mutual
42.	FS	Federal Specification of General Services Administration
43.	FSC	Forest Stewardship Council
44.	GA	Gypsum Association
45.	HMMA	Hollow Metal Manufacturers Association
46.	ICC-ES	International Code Council Evaluation Service
47.	ISO	International Organization for Standards
48.	MIA	Masonry Institute of America
49.	MMPA	Moulding and Millwork Producers Association
50.	MPI	Master Painters Institute
51.	NAAMM	National Association of Architectural Metal Manufactures
52.	NAAWS	North American Architectural Woodwork Standards
53.	NBFU	National Board of Fire Underwriters (See AIA)
54.	NBHA	National Builders Hardware Association
55.	NEC	National Electric Code of NFPA
56.	NEMA	National Electrical Manufacturers Association
57.	NFPA	National Fire Protection Association
58.	NFSHSA	National Federation of State High School Associations
59.	NRCA	National Roofing Contractors Association
60.	OSHA	Occupational Safety and Health Administration
61.	PCA	Portland Cement Association
62.	PCI	Precast Concrete Institute
63.	PI	Project Inspector
64.	PLIB	Pacific Lumber Inspection Bureau
65.	RIS	Redwood Inspection Service (Grading Rules)
66.	SCAQMD	South Coast Air Quality Management District
67.	SEI	Structural Engineering Institute
68.	SDI	Steel Door Institute
69.	SJI	Steel Joist Institute
70.	SMACNA	Sheet Metal and Air Conditioning Contractors National Association
71.	SMF	Office of the State Fire Marshal
72.	SPR	Simplified Practice Recommendation (US Dept. of Commerce)
73.	SSMA	Steel Stud Manufacturers Association
74.	SSPC	The society for Protective Coatings
75.	SWPPP	Storm Water Pollution Prevention Plan
76.	TCNA	Tile Council of North America
77.	Title 19	California Code of Regulations - Public Safety
78.	Title 24	California Code of Regulations - Building Codes
79.	TMS	The Masonry Institute

80.	UL	Underwriter's Laboratories, Inc.
81.	WCLIB	West Coast Lumber Inspection Bureau (successor to WCLA)
82.	WDMA	Window and Door Manufacturers Association
83.	WI	Woodwork Institute
84.	WRCLA	Western Red Cedar Lumber Association
85.	WWPA	Western Wood Products Association

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Definitions of terms and requirements pertaining to the contract documents,

1.2 RELATED REQUIREMENTS

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

1.3 DESCRIPTION OF REQUIREMENTS

A. General Explanation: A substantial amount of specification language consists of definitions for terms found in other contract documents, including the drawings. (Drawings must be recognized as diagrammatic in nature and not completely descriptive of the requirements indicated thereon.) Certain terms used in contract documents are defined in this Section. Definitions and explanations contained in this section are not necessarily either complete or exclusive, but are general for the work to the extent that they are not stated more explicitly in another element of the Contract Documents.

B. General Requirements: The provisions or requirements of Division 1 sections apply to entire work of Contract and, where so indicated, to other elements which are included in project.

C. Governing Regulations: Refer to General and Supplementary Conditions for requirements related to compliance with governing regulations.

D. Abbreviations: The language of specifications and other contract documents is of the abbreviated type in certain instances, and implies words and meanings which will be appropriately interpreted. Specific abbreviations have been established, principally for lengthy technical terminology and primarily in conjunction with coordination of specification requirements with notations on drawings and in schedules. These are frequently defined in sections at first instance of use. Trade association names and titles of general standards are frequently abbreviated.

1.4 DEFINITIONS

A. Approve: Where used in conjunction with Architect's/ Engineer's response to submittals, requests, applications, inquiries, reports and claims by Contractor, the meaning of term "approved" will be held to limitations of Architect's/Engineer's responsibilities and duties as specified in General and Supplementary Conditions. In no case will "approval" by Architect/Engineer be interpreted as a release of Contractor from responsibilities to fulfill requirements of contract documents.

B. Directed, Requested, etc.: Where not otherwise explained, terms such as "directed", "requested", "authorized", "selected", "approved", "required", "accepted", and

"permitted" mean "directed by Architect", "requested by Architect", and similar phrases. However, no such implied meaning will be interpreted to extend the Architect's responsibility into the Contractor's area of construction supervision.

C. Furnish: Except as otherwise defined in greater detail, term "furnish" is used to mean supply and deliver to project site, unloaded, ready for assembly, installation, etc., as applicable in each instance. See Also “Provide”.

D. Indicated: The term "indicated" is a cross-reference to graphic representations, notes or schedules on drawings, to other paragraphs or schedules in the specification, and to similar means of recording requirements in contract documents. Where terms such as "shown", "noted", "scheduled", and "specified" are used in lieu of "indicated", it is for purpose of helping reader locate cross-reference, and no limitation of location is intended except as specifically noted.

E. Install: Except as otherwise defined in greater detail, term "install" is used to describe operations at project site including unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning and similar operations, as applicable in each instance. See also “Provide”.

F. Installer: The term "installer" is defined as the entity (person or firm) engaged by the Contractor, its subcontractor or sub-subcontractor for performance of a particular unit of work at the project site, including installation, erection, application and similar required operations. It is a general requirement that such entities (installers) be expert in the operations they are engaged to perform.

G. Minimum Quality/Quantity: In every instance, the quality level or quantity shown or specified is intended to be the minimum for the work to be performed or provided. Except as otherwise specifically indicated, the actual work may either comply exactly with that minimum (within specified tolerances), or may exceed that minimum within reasonable limits. In complying with these requirements, indicated numeric values are either minimums or maximums as noted, or as appropriate for context of the requirements. Refer instances of uncertainty to Architect for decision before proceeding.

H. Project Site: The term "project site" is defined as the space available to the Contractor for performance of the work, either exclusively of or in conjunction with others performing other work as part of the project. The extent of the project site is shown on the drawings, and may or may not be identical with the description of the land upon which the project is to be built.

I. Provide: Except as otherwise defined in greater detail, term "provide" means furnish and install, complete and ready for intended use, as applicable in each instance.

J. Specialists, Assignments: In certain instances, specification test requires (or implies) that specific work is to be assigned to specialists or expert entities, who must be engaged for the performance of that work. Such assignments shall be recognized as special requirements over which the Contractor has no choice or option. These requirements should not be interpreted so as to conflict with the enforcement of building codes and similar regulations governing the work; they are also not intended to interfere with local union jurisdiction settlements and similar conventions. Such assignments are intended

to establish which party or entity involved in a specific unit of work is recognized as "expert" for the indicated construction processes or operations. Nevertheless, the final responsibility for fulfillment of the entire set of contract requirements remains with the Contractor.

K. Testing Laboratory: The term "testing laboratory" is defined as an independent entity engaged to perform specific inspections or tests of the work, either at the project site or elsewhere, and to report, and (if required) interpret results of those inspections or tests.

L. Trades: Except as otherwise indicated, the use of titles, such as "carpentry" in specification text, implies neither that the work must be performed by an accredited or unionized tradesperson of corresponding generic name (such as "carpenter"), nor that specified requirements apply exclusively to work by tradespersons of that corresponding generic name.

1.5 DRAWING SYMBOLS:

A. General: Except as otherwise indicated, graphic symbols used on drawings are those symbols recognized in the construction industry for purposes indicated.

B. Mechanical/Electrical Drawings: Graphic symbols used on mechanical and electrical drawings are generally aligned with symbols recommended by more specific symbols as recommended by other recognized technical associations including ASME, ASPE, IEEE and similar organizations. Refer instances of uncertainty to the Architect/Engineer for clarification before proceeding.

1.6 INDUSTRY STANDARDS:

A. General Applicability of Standards: Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, applicable standards of the construction industry have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the contract documents, or as if published copies where bound herewith. Refer to other contract documents for resolution of overlapping and conflicting requirements which result from the application of several different industry standards to the same unit of work. Refer to individual unit of work sections for indications of which specialized codes and standards the Contractor must keep at the project site, available for reference.

B. Referenced Standards (referenced directly in contract documents or by governing regulations) have precedence over non-referenced standards which are recognized in industry for applicability to work.

C. Non-referenced Standards are hereby defined as having no particular applicability to the work, except as a general requirement of whether the work complies with standards recognized in the construction industry.

D. Publication Dates: Except as otherwise indicated, where compliance with an industry standard is required, comply with standard in effect as of date of contract documents.

E. Copies of Standards: The contract documents require that each entity performing work be experienced in that part of the work being performed. Each entity is also required to be familiar with recognized industry standards applicable to that part of the work. Copies of applicable standards are not bound with the contract documents.

1. Where copies of standards are needed for proper performance of the work, the Contractor is required to obtain such copies directly from the publication source.
2. Although a certain number of copies of these standards may be required as a part of the submittal, the Architect/Engineer reserves the right to require the Contractor to submit additional copies of these standards as necessary for enforcement of the requirements.

F. Acronyms: Where acronyms are used in the specifications or other contract documents they are defined to mean the industry recognized name of the trade association, standards generating organization, governing authority or other entity applicable to the context of the test provision.

1.7 GOVERNING REGULATIONS/AUTHORITIES

A. General: The procedure followed by Architect/Engineer has been to contact governing authorities where necessary to obtain information needed for the purpose of preparing contract documents; recognizing that such information may or may not be of significance in relation to Contractor's responsibilities for performing the work. Contact governing authorities directly for necessary information and decisions having a bearing on performance of the work.

B. "Regulations" is defined to include laws, statutes, ordinances and lawful orders issued by governing authorities, as well as those rules, conventions and agreements within the construction industry which effectively control the performance of the work regardless of whether they are lawfully imposed by governing authority or not.

1.8 SUBMITTALS

A. Permits, Licenses, and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipt for fee payments, judgments, and similar documents, correspondence and records established in conjunction with compliance with standards and regulations bearing upon performance of the work.

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Administrative and procedural requirements related to inspections, tests, and related quality control procedures required to be performed by the Contractor and that facilitate the Contactor's compliance with the Contract Documents.

1.2 RELATED REQUIREMENTS

A. Section 01 3300, Submittal Procedures; submission of manufacturers' instructions and certificates.

B. Section 01 4523, Testing and Inspecting Services, and DSA 103; Special Tests and Inspections required by authorities having jurisdiction and are the responsibility of Owner.

C. Section 01 7700, Closeout Procedures.

D. Specific requirements for testing, inspections, mockups, and other quality control requirements as described in the various Sections of the Specifications.

1.3 DEFINITIONS

A. Experienced: When used with an entity or individual, and unless otherwise specified, means having successfully completed a minimum of three previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

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

C. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, subcontractor, or sub-subcontractor, to perform a particular construction operation, including installation, erection, application, assembly, and similar operations.

D. Mockups: Full-size, physical assemblies that are constructed on-site and in-place mockups to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, interface, testing, and operation of various building components. Mockups are not samples.

E. Tests: Procedures intended to establish the quality, performance, or reliability of a product or system conducted by a qualified Testing Agency.

F. Source Quality-Control Tests: Tests and inspections related to materials manufactured or fabricated away from the jobsite that will be incorporated into the work.

G. Testing Agency: An independent entity engaged to perform specific tests, inspections, or both, is qualified to operate in California, and meets the additional requirements specified.

1. Testing laboratory shall mean the same as Testing Agency.

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

I. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Contractor's quality-control services do not include Contract administration activities performed by Architect.

1.4 REFERENCES AND STANDARD SPECIFICATIONS

A. General:

1. The Contract Documents contain references to various standard specifications, codes, practices, and requirements for materials, work quality, installation, inspections, and tests published and issued by the organizations, societies, and associations.
2. Contractor shall obtain its own copies of required specified referenced publications.
3. The specification or standard referred to shall have full force and effect as though printed in these Specifications.
4. When the effective date of a reference standard is not specified, it shall be understood that the current edition or latest revision thereof and any amendments or supplements thereto in effect on the date of the DSA approval, shall govern the Work.
5. The contractual relationships, duties, and responsibilities of the parties in Contract or those of the Architect shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

B. Products or workmanship specified by association, trade, or other consensus standards shall comply with requirements of the referenced standard or specification except when more rigid requirements are specified or are required by applicable codes.

C. Conflicting Requirements:

1. If compliance with two or more standards or requirements are specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement.
2. Refer conflicting requirements that are different, but apparently equal, to Architect for direction before proceeding.

1.5 ADMINISTRATIVE REQUIREMENTS

A. Submittal Procedures:

1. Informational Submittals shall be submitted in accordance with Section 01 3300, Submittal Procedures.
2. Closeout Submittals shall be submitted in accordance with Section 01 7700, Closeout Procedures.

1.6 INFORMATIONAL SUBMITTALS

A. Schedule of Tests and Inspections.

B. Field Superintendent's Quality Control Responsibilities.

C. Procedures for inspection prior to subsequent Work or cover up.

D. Qualifications of Contractor's Testing Agencies.

E. Certified copies of Reports and Documents.

1.7 CLOSEOUT SUBMITTALS

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

B. Test and Inspection Log including final record for each test and inspection as specified in Part 3 and in accordance with Section 01 7839, Project Record Documents.

1.8 REPORTS AND DOCUMENTS

A. Test and Inspection Reports: Prepare and submit certified written reports where specified in the Specification Sections. Include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.

11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and re-inspecting.

1.9 QUALITY ASSURANCE

A. Minimum Quantity or Quality Levels:

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

B. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).

C. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.

D. Correct conditions or workmanship not in conformance with specified standards or quality. Do so immediately after non-conformance item is discovered or within a reasonable time frame agreed upon with Construction Manager.

E. Comply with manufacturers' instructions, including each step in sequence. Should manufacturers' instructions conflict with Contract Documents, request clarification from the Architect before proceeding.

F. Comply with specified standards as minimum quality for the Work, except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

G. Perform Work by persons qualified to produce required and specified quality.

H. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

I. Upon delivery to the jobsite, materials and products shall be inspected for compliance with the Project Specifications.

1. Nonconforming materials, products, equipment, hardware, tools and/or safety devices shall be removed immediately from the general work area and stored within a secured area approved by the Owner as "NON CONFORMING MATERIALS AREA" to ensure that defective or nonconforming materials are not incorporated into or used on the project
2. Materials or products shall not be removed from the designated area until they are deemed by the Architect to be in compliance, or until they are modified or fixed to

meet the project specifications, or until they are removed from the jobsite for the purposes of disposal or shipment back to the manufacturer.

1.10 CONTRACTORS TESTING AGENCY

A. Qualifications: At Contractor's expense, provide an independent testing laboratory nationally recognized according to 29 CFR 1910.7 and accredited according to NIST's National Voluntary Laboratory Accreditation Program (NVLAP,) or other independent agency with the experience and capability to conduct testing and inspecting indicated, documented according to ASTM E329; with additional qualifications specified in individual Sections; and, where required, that is acceptable to authorities having jurisdiction.

B. Testing Agency shall cooperate with Architect, Owner's Project Inspector, and Contractor in performance of duties.

C. Testing Agency shall provide qualified personnel to perform required tests and inspections.

D. Testing Agency shall not be authorized to release, revoke, alter, or increase the Contract Document requirements, approve or accept any portion of the Work, or perform any duties of Contractor.

1.11 TESTS AND INSPECTIONS

A. Preconstruction Testing: Where preconstruction testing is specified to verify performance requirements, comply with the following as applicable:

1. Contractor Responsibilities:
    a. Provide test specimens representative of proposed products and construction.
    b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
    c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
    d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
    e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
    f. When testing is complete, remove test specimens, assemblies, and mockups; do not reuse products on Project unless approved by Architect in writing.

B. Tests and Inspections indicated in individual Specification Sections shall be conducted by a qualified Testing Agency. The responsibilities of the Testing Agency shall be as follows:

1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviews the completeness and adequacy of those procedures to perform the Work.
2. Notifying Architect, Owner's Project Inspector**,** and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
3. Submit a certified written report of each test, inspection, and similar quality-control service to Architect and Owner's Project Inspector with copy to Contractor and to DSA.
4. Submit a final report of tests and inspections at Substantial Completion which includes a list of unresolved deficiencies.
5. Interpret tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
6. Retest and reinspect corrected work.

C. Monitoring and Documentation: Contractor shall maintain testing and inspection reports including log of approved and rejected results as specified in Part 3.

1. Include work Architect has indicated as nonconforming or defective.
2. Indicate corrective actions taken to bring nonconforming work into compliance with requirements.
3. Comply with requirements of the California Division of the State Architect (DSA).

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 NOTIFICATIONS

A. Contractor shall provide the following notifications;

1. Owner's Project Inspector writing:
   a. 24 hours in advance of starting new Work
   b. 24 hours in advance of each test or inspection
2. 48 hours' prior notice, minimum, to the Testing Agency for required tests and inspections.

3.2 TEST AND INSPECTION FIELD BINDER

A. Contractor shall maintain in the Field Office a Test and Inspection Field Binder that includes a hard copy of the following documents:

1. Approved Quality Control Plan.
2. Specification Sections that apply to the respective portions of work.
3. RFI's, CCD's or other approved document that changes the work.

4. Manufacturer's Installation Instructions (MII).
5. Specific details of the Work as requested by the Inspector.
6. Test and Inspection Log.

3.3 TEST AND INSPECTION LOG

A. Prepare and maintain a record of tests and inspections using an electronic spreadsheet.

B. Include the following information:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. List pertinent detail/sheet number.
4. List pertinent Specification Section.
5. Attach manufacturer's installation inspections if applicable.
6. List and attach RFI's, ASI's or CCD's affecting the Work.
7. Date Inspector verified work is acceptable.

C. Final record for each test and inspection shall be submitted on Contractors letterhead and include the name of the responsible person to verify Work was in accordance with the approved Contract Documents.

3.4 MANUFACTURERS' FIELD SERVICES

A. When specified in respective Specification Sections, Contractor shall require supplier or manufacturer to provide qualified personnel to observe field conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, testing, adjusting and balancing of equipment as applicable, and to make appropriate recommendations. Contractor is responsible for proper notification of manufacturer's representative before installation of applicable work and for obtaining necessary inspection certificate stating that installation was observed and approved.

B. Product Performance Verification: The supplier of products specified based on performance criteria shall, at the request of the Agency, inspect the installed product and certify conformance of the product to specified criteria under the installed conditions.

C. Manufacturer's representative shall submit written report to the Architect listing observations and recommendations.

3.5 TOLERANCES - GENERAL

A. Monitor tolerance control of installed products or portions to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

3.6 DIMENSIONING AND TOLERANCES FOR ACCESSIBILITY

A. While it is recognized that construction practices generally permit a level of reasonable dimensional tolerance, the installation of items subject to compliance with the Americans with Disabilities Act Accessibility Guidelines and Chapter 11B of the California Building Code, typically does not allow such tolerances. Therefore, these dimensions are to be considered absolute and will be strictly enforced. Items found to be out of tolerance may require modification and/or replacement at Contractor's expense.

3.7 REPAIR AND PROTECTION

A. On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes.
2. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 01 7329, Cutting and Patching.

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

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

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Requirements for Testing Laboratory.
2. Contractor's responsibilities for facilitation of Testing and Inspections.

1.2 RELATED SECTIONS AND DOCUMENTS

A. Geologic Hazards & Soils Report.

B. DSA 103 - Structural Test & Inspections List.

C. Section 31 0000, Earthwork.

D. Individual Specification Sections: Inspections and tests required, and standards for testing.

1.3 REFERENCES

A. California Administrative Code (CAC), edition as noted on the drawings, as adopted by the California Division of the State Architect (DSA).

B. California Building Code (CBC), edition as noted on the drawings, as adopted by the California Division of the State Architect (DSA).

1.4 SELECTION AND PAYMENT

A. Testing laboratory shall be approved by both the Architect and the Division of the State Architect.

B. Owner will employ and pay for services of an independent testing laboratory to perform specified inspection and testing. Retesting costs for failed tests will be the Contractors responsibility and will be back-charged against the contract.

C. Under provisions for Relocatable Building construction, Owner limits his exposure to in-plant inspection and testing costs. Refer to other Specification Sections related to such specific construction.

D. Employment of testing laboratory shall in no way relieve Contractor of obligation to perform work in accordance with requirements of Contract Documents.

1.5 LABORATORY REPORTS

A. After each inspection and test, promptly submit two copies of laboratory report to Owner, Architect, Contractor and DSA.

B. Include:

1. Date of issue,
2. DSA Application and File numbers,
3. Project title and number,
4. Name of inspector,
5. Date and time of sampling or inspection,
6. Identification of product and Specification Section,
7. Location in the Project,
8. Type of inspection or test,
9. Date of test,
10. Results of test,
11. Conformance with Contract Documents.

C. When requested by Architect, provide interpretation of test results.

1.6 LIMITS ON TESTING LABORATORY AUTHORITY

A. Laboratory may not release, revoke, alter or enlarge on requirements of Contract Documents.

B. Laboratory may not approve or accept any portion of the work.

C. Laboratory may not assume any duties of Contractor.

D. Laboratory has no authority to stop the work.

1.7 CONTRACTOR RESPONSIBILITIES

A. Deliver to laboratory at designated location, adequate samples of materials proposed to be used which require testing, along with proposed mix designs. Allow reasonable time for review and testing.

B. Arrange for, and coordinate with, laboratory for all required testing and inspection. Provide adequate notice, in advance, for proper scheduling and processing of testing. The Inspector will not be responsible for scheduling or arranging for testing and inspection services.

C. Cooperate with laboratory personnel, and provide access to the work and to manufacturer's facilities.

D. Provide incidental labor and facilities to provide access to work to be tested, to obtain and handle samples at the site or at the source of products to be tested, to facilitate tests and inspections, storage and curing of test samples.

E. Notify Architect, Inspector, Structural Engineer (when applicable) and laboratory 24 hours prior to expected time for operations requiring inspection and testing services.

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: VOC restrictions for product categories listed below under Article "DEFINITIONS" and in compliance with the following.

1. California Code of Regulations, Title 24, Part 11 California Green Building Standards Code.
2. No Rating System is applicable.

B. Products of each category that are installed in the project must comply; applicable laws and ordinances do not allow for partial compliance.

C. Listing of a product in these Specifications shall not be construed as a solicitation or requirement to use any product or combination of products in violation of the requirements of South Coast Air Quality Management District Rule No.1168, as described in Rule 1168(g).

1. If a listed product does not meet the requirements of this rule, request approval for use of an alternate product by the same or another manufacturer meeting the requirements of this rule.
2. Do not use products which do not meet the requirements of this rule.

1.2 RELATED REQUIREMENTS

A. Divisions 01 through 33 contain related requirements specific to the work of each of these Sections. Requirements may or may not include reference to this Section.

1.3 REFERENCES

A. California Green Building Standards Code (CALGreen), edition as noted on the Drawings, as adopted by the California Division of the State Architect (DSA).

B. Low-Emitting Materials Product List; California Collaborative for High Performance Schools (CHPS); current edition at www.chps.net/.

C. CRI (GLCC) - Green Label Testing Program - Approved Product Categories for Carpet Cushion; Carpet and Rug Institute; current edition.

D. CRI (GLP) - Green Label Plus Carpet Testing Program - Approved Products; Carpet and Rug Institute; current edition.

E. GEI (SCH) - GREENGUARD "Children and Schools" Certified Products; GREENGUARD Environmental Institute; current listings at www.greenguard.org.

F. GreenSeal GS-36 - Commercial Adhesives; Green Seal, Inc.

G. SCAQMD 1168 - South Coast Air Quality Management District Rule No.1168; current edition; www.aqmd.gov.

H. SCS (CPD) - SCS Certified Products; Scientific Certification Systems; current listings at www.scscertified.com.

1.4 DEFINITIONS

A. VOC-Restricted Products: Products of each of the following categories when installed or applied on-site:

1. Adhesives, sealants, and sealer coatings, regardless of specification Section or Division.
2. Paints and coatings.
3. Carpet and resilient flooring.
4. Composite wood products; plywood, particleboard, wood fiberboard.

B. Adhesives: Gunnable, trowelable, liquid-applied, and aerosol adhesives, whether specified or not; including flooring adhesives, resilient base adhesives, and pipe jointing adhesives.

C. Sealants: Gunnable, trowelable, and liquid-applied joint sealants and sealant primers, whether specified or not; including firestopping sealants and duct joint sealers.

1.5 SUBMITTAL REQUIREMENTS

A. Product Data: For each VOC-restricted product used in the project, submit product data showing compliance, except when another type of evidence of compliance is required.

B. Verification of Compliance: Submit for each different product in each applicable category.

1. Identify evidence submittals with the words "CALGreen VOC Compliance Report".

C. Installer Certifications for Accessory Materials:

1. 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 their products, or 2) that such products used comply with these requirements.
2. Use the form following at the end of Part 3 in this Section for Installer certifications.

1.6 QUALITY ASSURANCE

A. Manufacturer’s Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this Section.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General:

1. Provide products conforming to local, State and Federal government requirements limiting the amount of volatile organic compounds contained in the product, for its intended application. If specified product exceeds current requirement, provide conforming product at no additional cost.
2. Provide only products having volatile organic compound (VOC) content not greater than required by South Coast Air Quality Management District Rule No.1168 and less where required by code.
3. Products are specified in multiple Sections throughout these Specifications.

B. Composite Wood Products: Comply with CALGreen Section 5.504 and Table 5.504.4.5 formaldehyde limits for hardwood plywood, particleboard, and medium density fiberboard composite wood products used on the interior and exterior of the building.

1. Verification of Compliance: Acceptable types are:
   a. Certification by manufacturer that product complies with requirements.
   b. Published product data showing compliance with requirements.
   c. Chain of custody certifications.
   d. Product labeled and invoiced as meeting the Composite Wood Products regulation (CCR, Title 17, Section 93120, et seq.).
   e. Products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269, or European 636 3S standards.
   f. Other method acceptable to enforcing agency.

Table 5.504.4.5 FORMALDEHYDE LIMITS

Maximum Formaldehyde Emissions in Parts per Million	
Product	**Current Limit**
Hardwood plywood veneer core	0.05
Hardwood plywood composite core	0.05
Particleboard	0.09
Medium density fiberboard	0.11
Thin medium density fiberboard[1]	0.13
Note 1: Thin medium density fiberboard has a maximum thickness of 5/16 inch (8 mm).	

C. Insulation: Comply with CALGreen Section 5.504.4.8.2 formaldehyde limits for insulation.

1. Verification of Compliance: Documentation from manufacturer verifying thermal insulation materials meet the pollutant emission limits of one of the following.
   a. The VOC-emission limits defined in 2014 CACHPS criteria and listed on its High Performance Products Database.
   b. California Department of Public Health 2010 Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, Version 1.1, February 2010 (also known as Specification 01350.)

D. Adhesives, Including Carpet and Cushion Adhesives: Comply with CALGreen Section 5.504 and Table 5.504.4.1.

1. Verification of Compliance: Acceptable types are:
    a. Report of laboratory testing performed in accordance with requirements.
    b. Published product data showing compliance with requirements.
    c. Certification by manufacturer that product complies with requirements.
2. Aerosol Adhesives: Comply with Table 5.504.4.1 of CalGreen Section 5.504, and California Code of Regulations Title 17, Section 94507.
    a. Verification of Compliance: Acceptable types are:
        1) Current GreenSeal Certification.
        2) Report of laboratory testing performed in accordance with GreenSeal GS-36 requirements.
        3) Published product data showing compliance with requirements.

3. Products used shall comply with the following limits.

Table 5.504.4.1 ADHESIVE VOC LIMIT	
Architectural Applications	**Current VOC Limit**
Indoor Carpet Adhesives	50
Carpet Pad Adhesives	50
Outdoor Carpet Adhesives	150
Wood Flooring Adhesive	100
Rubber Floor Adhesives	60
Subfloor Adhesives	50
Ceramic Tile Adhesives	65
VCT and Asphalt Tile Adhesives	50
Dry Wall and Panel Adhesives	50
Cove Base Adhesives	50
Multipurpose Construction Adhesives	70
Structural Glazing Adhesives	100
Single Ply Roof Membrane Adhesives	250
Other adhesives not specifically listed	250
VOC Limits and Effective Dates**	
Specialty Applications	**Current VOC Limit**
PVC Welding	510
CPVC Welding	490
ABS Welding	325
Plastic Cement Welding	250
Adhesive Primer for Plastic	550
Contact Adhesive	80
Special Purpose Contact Adhesive	250
Structural Wood Member Adhesive	140
Top and Trim Adhesive	250

Table 5.504.4.1 ADHESIVE VOC LIMIT	
** The specified limits remain in effect unless revised limits are listed in the current governing edition of CalGreen.	
For adhesives, adhesive bonding primers, or any other primer not regulated by the above two Tables and applied to the following substrates, the following limits shall apply:	
Substrate Specific Applications	**Current VOC Limit**
Metal to Metal	30
Plastic Foams	50
Porous Material (except wood)	50
Wood	30
Fiberglass 80	80
Note: If an adhesive is used to bond dissimilar substrates together the adhesive with the highest VOC content shall be allowed.	

E. Joint Sealants: Comply with CALGreen Section 5.504 and Table 5.504.4.2.

1. Verification of Compliance: Acceptable types are:
   a. Report of laboratory testing performed in accordance with requirements.
   b. Published product data showing compliance with requirements.
   c. Certification by manufacturer that product complies with requirements.

2. Products used shall comply with the following limits.

Table 5.504.4.2 SEALANT VOC LIMIT	
Less Water and Less Exempt Compounds in Grams per Liter	
Sealant	Current VOC Limit
Architectural	250
Marine Deck	760
Non-Membrane Roof	300
Roadway	250
Single-Ply Roof Membrane	450
Other	420
Sealant Primers	Current VOC Limit
Architectural Non-Porous Porous	 250 775
Modified Bituminous	500
Marine Deck	760
Other	750
For low-solid adhesives or sealants the VOC limit is expressed in grams per liter of material; for all other adhesives and sealants, VOC limits are expressed as grams of VOC per liter of adhesive or sealant less water and less exempt compounds.	

F. Resilient Flooring Products: Comply with CALGreen 5.504.4.6.

1. Eighty percent of floor area receiving resilient flooring shall meet one of the following:
   a. Certified under the Resilient Floor Covering Institute (RFCI) FloorScore program.
   b. Compliant with the VOC-emission limits and testing requirements specified in the California Department of Public Health's 2010 Standard Method for the Testing and Evaluation Chambers, Version 1.1, February 2010;
   c. Complying with VOC emission limits in CHPS 2009 criteria and listed on the Low Emitting Materials List or Product Registry.
   d. Products certified under UL GREENGUARD Gold (formerly the Greenguard Children's & Schools Program).
2. Verification of Compliance:
   a. Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits.

G. Carpet: Comply with CALGreen 5.504.4.4.

1. Verification of Compliance: Meet testing and product requirements of one of the following:
   a. Carpet & Rug Institute "Green Label Plus".
   b. California Department of Public Health Standard Practice for testing of VOC's (Specification 01 350).
   c. NSF/ANSI 140 at Gold Level or higher.
   d. Scientific Certification Systems Sustainable Choice or Compliant with the Collaborative for High Performance Schools California (2014 CA-CHPS) Criteria and listed in the CHPS High Performance Product Database.

H. Carpet Cushion: Comply with CALGreen Section 5.504 and Table 5.504.4.1.

1. Verification of Compliance:
   a. Meet requirements of Carpet & Rug Institute's "Green Label Program."

I. Paints and Coatings: Comply with CALGreen Section 5.504 and Table 5.504.4.3 based on the California Air Resources Board, Architectural Coatings Suggested Control Measure.

1. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at Project site; or other method acceptable to authorities having jurisdiction.
   a. Verification of Compliance: Acceptable types are:
      1) Report of laboratory testing performed in accordance with requirements.
      2) Published product data showing compliance with requirements.
      3) Certification by manufacturer that product complies with requirements.

2. Provide coatings that comply with the most stringent requirements specified in the following:
   a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
   b. South Coast Air Quality Management District Rule No.1168.
3. Products used shall comply with the following limits.

Table 5.504.4.3 VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS (See Notes 2 & 3 below)	
Grams of VOC per Liter of Coating, less water and less exempt compounds	
Coating Category	**Current VOC Limit 1/1/2012**
Flat Coatings	50
Non-Flat Coatings	100
Non-Flat High Gloss Coatings	150
Specialty Coatings	
Aluminum Roof Coatings	400
Basement Specialty Coatings	400
Bituminous Roof Coatings	50
Bituminous Roof Primers	350
Bond Breakers	350
Concrete Curing Compounds	350
Concrete / Masonry Sealers	100
Driveway Sealers	50
Dry Fog Coatings	150
Faux Finishing Coatings	350
Fire Resistive Coatings	350
Floor Coatings	100
Form-Release Compounds	250
Graphic Arts Coatings (Sign Paints)	500
High-Temperature Coatings	420
Industrial Maintenance Coatings	250
Low Solids Coatings (See Note 1 below)	120
Magnesite Cement Coatings	450
Mastic Texture Coatings	100
Metallic Pigmented Coatings	500
Multicolor Coatings	250
Pretreatment Wash Primers	420
Primers, Sealers and Undercoaters	100
Reactive Penetrating Sealers	350
Recycled Coatings	250
Roof Coatings	50
Rust Preventative Coatings	250

Table 5.504.4.3 VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS (See Notes 2 & 3 below)	
Grams of VOC per Liter of Coating, less water and less exempt compounds	
Coating Category	**Current VOC Limit 1/1/2012**
Shellacs:	
Clear	730
Opaque	550
Specialty Primers, Sealers and Undercoaters	100
Stains	250
Stone Consolidants	450
Swimming Pool Coatings	340
Traffic Marking Coatings	100
Waterproofing Membranes	250
Wood Coatings	275
Wood Preservatives	350
Zinc Rich Primers	340
Note 1: Grams of VOC per liter of coating including water and including exempt compounds	
Note 2: Not Applicable	
Note 3: Values in this table are derived from those specified by the California Air Resources Board, Architectural Coatings Suggested Control Measure, February 1, 2008. More information is available from the Air Resources Board.	

4. Restricted Components: In addition to the specified VOC limits, paints and coatings shall not contain any of the following:
   a. Acrolein.
   b. Acrylonitrile.
   c. Antimony.
   d. Benzene.
   e. Butyl benzyl phthalate.
   f. Cadmium.
   g. Di (2-ethylhexyl) phthalate.
   h. Di-n-butyl phthalate.
   i. Di-n-octyl phthalate.
   j. 1,2-dichlorobenzene.
   k. Diethyl phthalate.
   l. Dimethyl phthalate.
   m. Ethylbenzene.
   n. Formaldehyde.
   o. Hexavalent chromium.
   p. Isophorone.
   q. Lead.
   r. Mercury.

s. Methyl ethyl ketone.
t. Methyl isobutyl ketone.
u. Methylene chloride.
v. Naphthalene.
w. Toluene (methylbenzene).
x. 1,1,1-trichloroethane.
y. Vinyl chloride.

PART 3 - EXECUTION

3.1 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, including fines by authorities, due to installation of non-compliant products shall be borne by Contractor.

3.2 CERTIFICATION FORM

A. Use of this Form:

1. 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.
2. Contractor is required to obtain and submit this Form from each installer of work on this project.
3. For each product category listed, circle the correct words in brackets: either [HAS] or [HAS NOT].
4. If these accessory materials have been used, attach to this form product data and MSDS sheet for each such product.

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ACCESSORY MATERIAL VOC CONTENT CERTIFICATION FORM

IDENTIFICATION:

Project Name: _____

Project No.: _____

Architect: _____

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

1. [HAS] [HAS NOT] required the use of any ADHESIVES.
2. [HAS] [HAS NOT] required the use of any JOINT SEALANTS.
3. [HAS] [HAS NOT] required the use of any PAINTS OR COATINGS.
4. [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

FIELD ENGINEERING AND CONSTRUCTION SURVEYING
SECTION 01 7123
22-1545

PART 1 - GENERAL

1.1 INCLUSION OF OTHER CONTRACT DOCUMENTS

A. The General Conditions, Supplementary Conditions and Division 1 are fully applicable to this Section, as if repeated herein.

1.2 SECTION INCLUDES

A. Contractor to provide and pay for field engineering services required for the execution of work, including, but not limited to:

1. Survey Work required in execution of the Bid Package Work scope.
2. Civil, structural or other professional engineering services specified, or required to execute Contractor's construction methods.

B. Provide field staking of site improvements included in Bid Package; identify existing survey reference points and property line corner stakes indicated on Drawings.

C. Locate and be aware of all existing on-site utility lines and improvements.

1.3 QUALIFICATIONS OF SURVEYOR OR ENGINEER

A. Qualified California registered professional engineer or registered land surveyor, acceptable to Contractor and the District Representative.

B. Registered professional engineer of discipline required for specific service on Project, licensed in State of California.

1.4 SUBMITTALS

A. Submit name, address, and license of surveyor and/or professional engineer to the District Representative.

1.5 PROJECT SURVEY REQUIREMENTS

A. Establish and maintain lines and levels as necessary to locate and layout entire scope of Work in Bid Package.

B. Preserve and protect all on-site underground utility lines and existing on-site improvements in the area of construction.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Cutting and patching:
   a. For construction that is defective, or as required to install incomplete work shown in the Contract Documents.
   b. To extend work or restore existing construction to its original condition, unless otherwise specified or shown on the drawings.

1.2 RELATED REQUIREMENTS

A. Section 01 6116, Volatile Organic Compound (VOC) Restrictions, for VOC limits pertaining to adhesives, sealants, fillers, primers, and coatings.

B. Section 31 2333, Trenching and Backfilling.

1.3 REFERENCES

A. California Building Code (CBC), edition as noted on the drawings, as adopted by the California Division of the State Architect (DSA).

B. California Green Building Standards Code (CALGreen), edition as noted on the Drawings, as adopted by the California Division of the State Architect (DSA).

1.4 ADMINISTRATION REQUIREMENTS

A. Submittal Procedures:

1. Action Submittals and Informational Submittals shall be submitted in accordance with Section 01 3300, Submittal Procedures.
2. Closeout Submittals shall be submitted in accordance with Section 01 7700, Closeout Procedures.
3. Sustainable Design Submittals shall comply with the additional requirements of Section 01 8113, Sustainable Design Requirements.

1.5 ACTION SUBMITTALS

A. Manufacturer's Data: For products not included in the specifications, submit list and complete descriptive data of all products proposed for use. Include manufacturer's specifications, and installation instructions.

B. Samples: As requested by the Architect.

C. Request for Cutting and Patching:

1. Submit a written request to Architect well in advance of executing any cutting or alteration which affects:
    a. Work of the Owner or any separate contractor.
    b. Structural value or integrity of any element of the Project.
    c. Integrity or effectiveness of weather-exposed or moisture-resistant elements or systems.
    d. Efficiency, operational life, maintenance or safety of operational elements.
    e. Visual qualities of sight-exposed elements.
    f. No cutting of structural elements is allowed unless shown on the Division of the State Architect's approved drawings
2. Request shall include:
    a. Project identification.
    b. Description of affected work.
    c. Necessity for cutting, alteration or excavation.
    d. Effect on work of Owner or any separate contractor, or on structural or weatherproof integrity of Project.
    e. Description of proposed work:
        1) Scope of cutting, patching, alteration, or excavation.
        2) Trades who will execute the work.
        3) Products proposed to be used.
        4) Extent of refinishing to be done.
    f. Alternatives to cutting and patching.
    g. Cost proposal, when applicable.
    h. Written permission of any separate contractor whose work will be affected.

D. Should conditions of work or schedule indicate change of products from original installation, Contractor shall submit request for substitution.

E. Submit written notice to Architect designating date and time work will be uncovered.

1.6 INFORMATIONAL SUBMITTALS

A. Sample of manufacturer’s warranty, where applicable.

B. Sustainable Design:

1. General:
    a. Submit information necessary to establish and document compliance with the California Green Building Standards Code.
    b. Sustainable design submittals are in addition to other submittals.
2. The following information shall be provided:
    a. Adhesives and Sealants: Evidence of compliance that products meet maximum VOC content limits specified in Section 01 6116.
    b. Paints and Coatings: Evidence of compliance that products meet maximum VOC content limits specified in Section 01 6116.

1.7 CLOSEOUT SUBMITTALS

A. Warranty/Guarantee: Submit executed warranties and Subcontractors' guarantees for products not included in the specifications.

1.8 QUALITY ASSURANCE

A. Qualifications for Installers:

1. General: As specified in the product specifications.
2. Employ specially qualified installers or fabricators to perform cutting and patching for:
   a. Weather-exposed or moisture-resistant elements.
   b. Sight-exposed finished surfaces.

B. Use only new materials and products, unless existing materials or products are specifically shown otherwise on the Drawings to be salvaged and re-used.

C. Single-Source Responsibility: Use materials and products of one manufacturer whenever possible.

D. All materials, components, assemblies, workmanship and installation are to be observed by the Owner's Project Inspector. Work not so inspected is subject to uncovering and replacement.

1.9 FIELD CONDITIONS

A. Make and be responsible for all field dimensions necessary for proper fitting and completion of work. Report discrepancies to Architect before proceeding.

1.10 WARRANTY

A. Manufacturer: In addition to the Contractor's and Subcontractor's Guarantee, furnish Owner with manufacturers' available fully executed written warranties for products not included in the specifications against defects in materials and workmanship

PART 2 - PRODUCTS

2.1 DESIGN AND PERFORMANCE CRITERIA

A. Sustainable Design:

1. VOC emissions for field-applied adhesives, sealants, and sealant primers must comply with limits specified in Section 01 6116.
2. VOC emissions for field-applied paints and coatings must comply with limits specified in Section 01 6116.

2.2 MATERIALS

A. Comply with these specifications, standards and manufacturer's recommendations for each specific product involved.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Inspect conditions of Project, including elements subject to damage or to movement during cutting and patching.

B. After uncovering work, inspect conditions affecting installation of products, or performance of work.

C. Verify that specified items may be installed in accordance with the approved design.

D. In event of discrepancy, immediately notify Architect. Do not proceed in discrepant areas until discrepancies have been fully resolved.

3.2 PREPARATION

A. Provide adequate temporary support as necessary to assure structural value or integrity of affected portion of work.

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

C. Provide protection from elements for that portion of Project which may be exposed by cutting and patching work, and maintain excavations free from water.

3.3 INSTALLATION

A. Execute cutting and demolition by methods which will prevent damage to other work and will provide proper surfaces to receive installation of repairs.

1. Removal or cutting of concrete paving shall occur at adjacent expansion joint or control joint.

B. Execute excavating and backfilling by methods which will prevent settlement or damage to other work, and in accordance with Section 31 2333, Trenching and Backfilling.

C. Execute fitting and adjustment of products to provide finished installation to comply with specified products, functions, tolerances and finishes.

D. Restore work which has been cut or removed; install new products to provide completed work in accord with requirements of Contract Documents.

E. Fit work airtight to pipe, sleeves, ducts, conduit and other penetrations through surfaces.

F. Refinish entire surfaces as necessary to provide even finish to match adjacent finishes:

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

3.4 CLEANING AND ADJUSTING

A. In the event of damage, make all repairs and replacements necessary to the approval of the Architect at no additional cost to the Owner.

B. Upon completion of installation, thoroughly wash surfaces and remove foreign material. Leave entire work in neat, orderly, clean and acceptable condition.

3.5 PROTECTION

A. Protect work and materials of this Section prior to and during installation, and protect the installed work and materials of other trades.

B. Exposed finishes shall be free from scratches, dents, permanent discolorations and other defects in workmanship or material.

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes: Requirements and procedures for ensuring optimal diversion of construction waste materials generated by the Work from landfill disposal within the limits of the Construction Schedule and Contract Sum.

1. The Work of this Contract requires that a minimum of **[65%]** by weight of the construction and demolition materials generated in the Work is diverted from landfill disposal through a combination of re-use and recycling activities.
2. CAL-Green: Alternate waste reduction methods developed in cooperation with local agencies if diversion or recycle facilities capable of compliance with CAL-Green requirements do not exist within the haul boundary of the jobsite (California Code of Regulations, Title 24, Part 11, 5.408).
3. Requirements for submittal of Contractor's Construction Waste and Recycling Plan prior to the commencement of the Work.
4. Contractor's quantitative reports for construction waste materials as a condition of approval of progress payments submitted to the Architect.

1.2 RELATED REQUIREMENTS

A. Section 01 3516, Alteration Project Procedures.

B. Section 01 7329, Cutting and Patching.

C. Section 02 2600, Hazardous Material Abatement (Various Materials).

D. Section 02 2623, Asbestos Assessment.

E. Section 02 2626, Lead Assessment.

F. Section 02 2629, Hazardous Materials Assessment - PCB Ballast & Fluorescent Lamps.

G. Section 02 4116, Building Demolition.

H. Section 02 4119, Selective Demolition.

I. Section 31 1000, Site Clearing.

1.3 REFERENCES AND STANDARDS

A. California Green Building Standards Code (CALGreen), edition as noted on the drawings, as adopted by the California Division of the State Architect (DSA).

1.4 DEFINITIONS

A. Class III Landfill: A landfill that accepts non-hazardous resources such as household, commercial, and industrial waste, resulting from construction, remodeling, repair, and

demolition operations. A Class III landfill must have a solid waste facilities permit from the California Integrated Waste Management Board (CIWMB) and is regulated by the Enforcement Agency (EA).

B. Construction and Demolition Debris: Building materials and solid waste resulting from construction, remodeling, repair, cleanup, or demolition operations that are not hazardous as defined in California Code of Regulations, Title 22, Section 66261.3 et seq. This term includes, but is not limited to, asphalt concrete, Portland cement concrete, brick, lumber, gypsum wallboard, cardboard and other associated packaging, roofing material, ceramic tile, carpeting, plastic pipe, and steel. The debris may be commingled with rock, soil, tree stumps, and other vegetative matter resulting from land clearing and landscaping for construction or land development projects.

C. C&D Recycling Center: A facility that receives only construction and demolition debris material that has been separated for reuse prior to receipt, in which the residual (disposed) amount of waste in the material is less than 10% of the amount separated for reuse by weight.

D. Disposal: Final deposition of construction and demolition or inert debris into land, including stockpiling onto land of construction and demolition debris that has not been sorted for further processing or resale, if such stockpiling is for a period of time greater than 30 days; and construction and demolition debris that has been sorted for further processing or resale, if such stockpiling is for a period of time greater than one year, or stockpiling onto land of inert debris that is for a period of time greater than one year.

E. Enforcement Agency (EA): Enforcement agency is the authority having jurisdiction within the Project location.

F. Inert Disposal Facility or Inert Waste Landfill: A disposal facility that accepts only inert waste such as soil and rock, fully cured asphalt paving, uncontaminated concrete (including fiberglass or steel reinforcing rods embedded in the concrete), brick, glass, and ceramics, for land disposal.

G. Mixed Debris: Loads that include commingled recyclable and non-recyclable materials generated at the construction site.

H. Mixed Debris Recycling Facility: A processing facility that accepts loads of commingled construction and demolition debris for the purpose of recovering re-usable and recyclable materials and disposing the non-recyclable residual materials.

I. Recycling: The process of sorting, cleansing, treating and reconstituting materials for the purpose of using the altered form in the manufacture of a new product. Recycling does not include burning, incinerating or thermally destroying solid waste.

J. Reuse. The use, in the same or similar form as it was produced, of a material which might otherwise be discarded.

K. Separated for Reuse. Materials, including commingled recyclables, that have been separated or kept separate from the solid waste stream for the purpose of additional sorting or processing those materials for reuse or recycling in order to return them to the economic mainstream in the form of raw material for new, reused, or reconstituted

products which meet the quality standards necessary to be used in the marketplace, and includes materials that have been “source separated”.

L. Solid Waste: All putrescible and nonputrescible solid, semisolid, and liquid wastes, including garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, abandoned vehicles and parts thereof, discarded home and industrial appliances, dewatered, treated, or chemically fixed sewage sludge which is not hazardous waste, manure, vegetable or animal solid and semisolid wastes, and other discarded solid and semisolid wastes. "Solid waste" does not include hazardous waste, radioactive waste, or medical waste as defined or regulated by State law.

M. Source-Separated: Materials, including commingled recyclables, that have been separated or kept separate from the solid waste stream at the point of generation, for the purpose of additional sorting or processing of those materials for reuse or recycling in order to return them to the economic mainstream in the form of raw materials for new, reused, or reconstituted products which meet the quality standards necessary to be used in the marketplace.

N. Waste Hauler: A company that possesses a valid permit from the local waste management authority having jurisdiction to collect and transport solid wastes from individuals or businesses for the purpose of recycling or disposal.

1.5 ADMINISTRATIVE REQUIREMENTS

A. Submittal Procedures:

1. Action Submittals and Informational Submittals shall be submitted in accordance with Section 01 3300, Submittal Procedures.
2. Closeout Submittals shall be submitted in accordance with Section 01 7700, Closeout Procedures.
3. Sustainable Design Submittals shall comply with the additional requirements of Section 01 8113, Sustainable Design Requirements.

1.6 ACTION SUBMITTALS

A. Contractor’s Construction Waste and Recycling Plan:

1. Review Contract Documents and estimate the types and quantities of materials under the Work that are anticipated to be feasible for on-site processing, source separation for re-use or recycling. Indicate the procedures that will be implemented in this program to effect jobsite source separation, such as, identifying a convenient location where dumpsters would be located, putting signage to identify materials to be placed in dumpsters, etc.
2. Prior to commencing the Work, submit Contractor’s Construction Waste and Recycling Plan. Submit in format provided with this specification section. The Plan must include, but is not limited to the following:
    a. Contractor’s name and project identification information;
    b. Procedures to be used;
    c. Materials to be re-used and recycled;

d. Estimated quantities of materials;

e. Names and locations of re-use and recycling facilities/sites;

f. Tonnage calculations that demonstrate that Contractor will re-use and recycle a minimum of **[65%]** by weight of the construction waste materials generated by the Work.

3. Contractor's Construction Waste and Recycling Plan must be approved by the Architect prior to the start of Work.

4. Contractor's Construction Waste and Recycling Plan will not otherwise relieve the Contractor of responsibility for adequate and continuing control of pollutants and other environmental protection measures

1.7 INFORMATIONAL SUBMITTALS

A. Contractor's Reuse, Recycling, and Disposal Report:

1. Submit Contractor's Reuse, Recycling, and Disposal Report on the form provided with this specification section with each Application & Certificate for Payment. Failure to submit the form and its supporting documentation will render the Application & Certificate for Payment incomplete and delay progress payments. If applicable, include manifests, weight tickets, receipts, and invoices specifically identifying the Project for re-used and recycled materials:

   a. Reuse of building materials or salvage items on site (i.e. crushed base or red clay brick).

   b. Salvaging building materials or salvage items at an offsite salvage or reuse center (i.e. lighting, fixtures).

   c. Recycling source separated materials on site (i.e. crushing asphalt/concrete for base course, or grinding for mulch).

   d. Recycling source separated material at an offsite recycling center (i.e. scrap metal or green materials).

   e. Use of material as Alternative Daily Cover (ADC) at landfills.

   f. Delivery of soils or mixed inerts to an inert landfill for disposal (inert fill).

   g. Disposal at a landfill or transfer station (where no recycling takes place).

   h. Other (describe).

2. Contractor's Reuse, Recycling, and Disposal Report must quantify all materials generated in the Work, disposed in Class III landfills, or diverted from disposal through recycling. Indicate zero (0) if there is no quantity to report for a type of material. As indicated on the form:

   a. Report disposal or recycling either in tons or in cubic yards. If scales are available at disposal or recycling facility, report in tons; otherwise, report in cubic yards. Report in units for salvage items when no tonnage or cubic yard measurement is feasible.

   b. Indicate locations to which materials are delivered for reuse, salvage, recycling, accepted as daily cover, inert backfill, or disposal in landfills or transfer stations.

   c. Provide legible copies of weight tickets, receipts, or invoices that specifically identify the project generating the material. Said documents must be from

recyclers and/or disposal site operators that can legally accept the materials for the purpose of re-use, recycling, or disposal.

1) Indicate project title, project number, progress payment number, name of the company completing the Contractor's Report and compiling backup documentation, the printed name, signature, and daytime phone number of the person completing the form, the beginning and ending dates of the period covered on the Contractor's Report, and the date that the Contractor's Report is completed.

3. Demonstrate compliance with California Code of Regulations, Title 24, Part 11 California Green Building Standards Code, "CAL-Green" 5.408.2, to the satisfaction of the enforcing agency.
   a. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
   b. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

PART 2 - PRODUCTS-NOT USED

PART 3 - EXECUTION

3.1 WASTE MANAGEMENT PLAN

A. Implement procedures for disposal of materials, as specified in Contractor's Construction Waste and Recycling Plan, which are not diverted for re-use, salvage or recycling.

1. Identify materials to be diverted from disposal by efficient usage, recycling, reuse on the project, or salvage for future use or sale.
2. Determine if materials will be sorted on-site or mixed.
3. Identify diversion facilities where material collected will be taken.
4. Specify that quantities of diverted material will calculated by weight or volume, but not both.

3.2 SALVAGE, RE-USE, RECYCLING AND PROCEDURES

A. Re-use, Salvage, and Recycling Facilities: As specified in Contractor's Construction Waste and Recycling Plan.

B. Develop and implement procedures to re-use, salvage, and recycle new construction and excavation materials, based on the Contract Documents, the Contractor's Construction Waste and Recycling Plan, estimated quantities of available materials, and availability of recycling facilities. Procedures may include on-site recycling, source separated recycling, and/or mixed debris recycling efforts.

1. Identify materials that are feasible for salvage, determine requirements for site storage, and transportation of materials to a salvage facility.

2. Source separate new construction, excavation and demolition materials including, but not limited to the following types.
    a. Asphalt.
    b. Concrete, concrete block, slump stone (decorative concrete block), and rocks.
    c. Drywall.
    d. Green materials (i.e. tree trimmings and land clearing debris).
    e. Metal (ferrous and non-ferrous).
    f. Miscellaneous Construction Debris.
    g. Paper or cardboard.
    h. Red Clay Brick.
    i. Reuse or Salvage Materials
    j. Soils.
    k. Wire and Cable.
    l. Wood.
    m. Other (describe)
3. Miscellaneous Construction Debris: Develop and implement a program to transport loads of mixed (commingled) new construction materials that cannot be feasibly source separated to a mixed materials recycling facility

3.3 DISPOSAL OPERATIONS AND WASTE HAULING

A. Legally transport and dispose of materials that cannot be delivered to a source separated or mixed recycling facility to a transfer station or disposal facility that can legally accept the materials for the purpose of disposal.

B. Use a permitted waste hauler or Contractor's trucking services and personnel. To confirm valid permitted status of waste haulers, contact the local solid waste authority having jurisdiction.

C. Become familiar with the conditions for acceptance of new construction, excavation and demolition materials at recycling facilities, prior to delivering materials.

D. Deliver to facilities that can legally accept new construction, excavation and demolition materials for purpose of re-use, recycling, composting, or disposal.

E. Do not burn, bury or otherwise dispose of solid waste on the project job-site.

3.4 RE-USE AND DONATION OPTIONS

A. Implement a re-use program to the greatest extent feasible. Options may include:

1. California Materials Exchange (CAL-MAX) Program is sponsored by the California Integrated Waste Management Board. CAL-MAX is a free service provided by the California Integrated Waste Management Board, designed to help businesses find markets for materials that traditionally would be discarded. The premise of the CAL-MAX Program is that material discarded by one business may be a resource for another business. To obtain a current Materials Listings Catalog, call CAL-

MAX/California Integrated Waste Management Board at (916) 255-2369 or send a FAX to (916) 255-2200. The CALMAX Catalog is available through the Internet Site at http://www.ciwmb/ca.gov/calmax.

3.5 REVENUE

A. Revenues or other savings obtained from recycled, re-used, or salvaged materials shall accrue to Contractor unless otherwise noted in the Contract Documents

END OF SECTION

SECTION 01 7419A

CONTRACTOR'S CONSTRUCTION WASTE AND RECYCLING PLAN

(Submit After Award of Contract and Prior to Start of Work)

Project Title:		
Contract or Work Order No.:		
Contractor's Name:		
Street Address:		
City:	State:	Zip:
Phone: ( )	Fax: ( )	
E-Mail Address:		
Prepared by: (Print Name)		

Date Submitted:		
Project Period:	From:	TO:

Reuse, Recycling or Disposal Processes To Be Used

Describe the types of recycling processes or disposal activities that will be used for material generated in the project. Indicate the type of process or activity by number, types of materials, and estimated quantities that will be recycled or disposed in the sections below:

01 - Reuse of building materials or salvage items on site (i.e. crushed base or red clay brick)
02 - Salvaging building materials or salvage items at an off site salvage or re-use center (i.e. lighting, fixtures)
03 - Recycling source separated materials on site (i.e. crushing asphalt/concrete for reuse or grinding for mulch)
04 - Recycling source separated materials at an off site recycling center (i.e. scrap metal or green matls)
05 - Recycling commingled loads of C&D matls at an off site mixed debris recycling center or transfer station
06 - Recycling material as Alternative Daily Cover at landfills
07 - Delivery of soils or mixed inerts to an inert landfill for disposal (inert fill).
08 - Disposal at a landfill or transfer station.
09 - Other (please describe) _____

Types of Material To Be Generated

Use these codes to indicate the types of material that will be generated on the project

A = Asphalt	C = Concrete	M = Metals	I = Mixed Inert	G = Green Matls
D = Drywall	P/C=Paper/Cardboard	W/C = Wire/Cable	S= Soils (Non Hazardous)	
M/C = Miscellaneous Construction Debris		R = Reuse/Salvage	W = Wood	O = Other (describe)

Facilities Used: Provide Name of Facility and Location (City)

Total Truck Loads: Provide Number of Trucks Hauled from Site During Reporting Period

Total Quantities: If scales are available at sites, report in tons. If not, quantify by cubic yards. For salvage/reuse items, quantify by estimated weight (or units).

SECTION I - RE-USED/RECYCLED MATERIALS

Include all recycling activities for source separated or mixed material recycling centers where recycling will occur.

Type of Material	Type of Activity	Facility to be Used/Location	Total Truck Loads	Total Quantities Tons	Cubic YD	Other Wt.
(ex.) M	04	ABC Metals, Los Angeles	24	355		
a. Total Diversion			0	0	0	0

SECTION 01 7419A

CONTRACTOR'S CONSTRUCTION WASTE AND RECYCLING PLAN

Continued

SECTION II - DISPOSED MATERIALS								
Include all disposal activities for landfills, transfer stations, or inert landfills where no recycling will occur.								
Type of Material	Type of Activity	Facility to be Used/Location			Total Truck Loads	Total Quantities Tons	Cubic YD	Other Wt.
(ex.) D	08	DEF Landfill, Los Angeles			2	35		
b. Total Disposal						0	0	0

SECTION III - TOTAL MATERIALS GENERATED						
This section calculates the total materials to be generated during the project period (Reuse/Recycle + Disposal = Generation						
				Tons	Cubic YD	Other Wt.
a. Total Reused/Recycled				0	0	0
b. Total Disposed				0	0	0
c. Total Generated				0	0	0

SECTION IV - CONTRACTOR'S LANDFILL DIVERSION RATE CALCULATION					
Add totals from Section I + Section II					
	Tons	Cubic Yards	Other Wt.		
a. Materials Re-Used and Recycled	0				
b. Materials Disposed	0				
c. Total Materials Generated (a. + b. = c.)	0	0	0		
d. Landfill Diversion Rate (Tons Only)*	#DIV/0!				

** Use tons only to calculate recycling percentages: Tons Reused/Recycled/Tons Generated = % Recycled*

Contractor's Comments (Provide any additional information pertinent to planned reuse, recycling, or disposal activities):

Notes:

1. Suggested Conversion Factors: From Cubic Yards to Tons (Use when scales are not available)

   Asphalt: .61 (ex. 1000 CY Asphalt = 610 tons. Applies to broken chunks of asphalt)

   Concrete: .93 (ex. 1000 CY Concrete = 930 tons. Applies to broken chunks of concrete)

   Ferrous Metals: .22 (ex. 1000 CY Ferrous Metal = 220 tons)

   Non-Ferrous Metals: .10 (ex. 1000 CY Non-Ferrous Metals = 100 tons)

   Drywall Scrap: .20

   Wood Scrap: .16

SECTION 01 7419B

CONTRACTOR'S REUSE, RECYCLING, AND DISPOSAL REPORT

(Submit With Each Progress Payment)

Project Title:		
Contract or Work Order No.:		
Contractor's Name:		
Street Address:		
City:	State:	Zip:
Phone: ( )	Fax: ( )	
E-Mail Address:		
Prepared by: (Print Name)		

Date Submitted:		
Period Covered:	From:	To:

Reuse, Recycling or Disposal Processes Used

Describe the types of recycling processes or disposal activities used for material generated in the project. Indicate the type of process or activity by number, types of materials, and quantities that were recycled or disposed in the sections below:

01 - Reuse of building materials or salvage items on site (i.e. crushed base or red clay brick)
02 - Salvaging building materials or salvage items at an off site salvage or re-use center (i.e. lighting, fixtures)
03 - Recycling source separated materials on site (i.e. crushing asphalt/concrete for reuse or grinding for mulch)
04 - Recycling source separated materials at an off site recycling center (i.e. scrap metal or green matls)
05 - Recycling commingled loads of C&D matls at an off site mixed debris recycling center or transfer station
06 - Recycling material as Alternative Daily Cover at landfills
07 - Delivery of soils or mixed inerts to an inert landfill for disposal (inert fill).
08 - Disposal at a landfill or transfer station.
09 - Other (please describe) _____

Types of Material Generated

Use these codes to indicate the types of material that were generated on the project

A = Asphalt	C = Concrete	M = Metals	I = Mixed Inert	G = Green Matls
D = Drywall	P/C=Paper/Cardboard	W/C = Wire/Cable	S= Soils (Non Hazardous)	
M/C = Miscellaneous Construction Debris		R = Reuse/Salvage	W = Wood	O = Other (describe)

Facilities Used: Provide Name of Facility and Location (City)

Total Truck Loads: Provide Number of Trucks Hauled from Site During Reporting Period

Total Quantities: If scales are available at sites, report in tons. If not, quantify by cubic yards. For salvage/reuse items, quantify by estimated weight (or units).

SECTION I - RE-USED/RECYCLED MATERIALS

Include all recycling activities for source separated or mixed material recycling centers where recycling occurred.

Type of Material	Type of Activity	Facilities Used/Location	Total Truck Loads	Total Quantities Tons	Cubic YD	Other Wt.
(ex.) M	04	ABC Metals, Los Angeles	24	355		
a. Total Diversion			0	0	0	0

SECTION 01 7419B

CONTRACTOR'S REUSE, RECYCLING, AND DISPOSAL REPORT

Continued

SECTION II - DISPOSED MATERIALS								
Include all disposal activities for landfills, transfer stations, or inert landfills where no recycling occurred.								
Type of Material	Type of Activity	Facilities Used/Location			Total Truck Loads	Total Quantities Tons	Cubic YD	Other Wt.
(ex.) D	08	DEF Landfill, Los Angeles			2	35		
b. Total Disposal						0	0	0

SECTION III - TOTAL MATERIALS GENERATED						
This section calculates the total materials generated during the project period (Reuse/Recycle + Disposal = Generation						
				Tons	Cubic YD	Other Wt.
a. Total Reused/Recycled				0	0	0
b. Total Disposed				0	0	0
c. Total Generated				0	0	0

SECTION IV - CONTRACTOR'S LANDFILL DIVERSION RATE CALCULATION					
Add totals from Section I + Section II					
	Tons	Cubic Yards	Other Wt.		
a. Materials Re-Used and Recycled	0				
b. Materials Disposed	0				
c. Total Materials Generated (a. + b. = c.)	0	0	0		
d. Landfill Diversion Rate (Tons Only)*	#DIV/0!				

** Use tons only to calculate recycling percentages: Tons Reused/Recycled/Tons Generated = % Recycled*

Contractor's Comments (*Provide any additional information pertinent to planned reuse, recycling, or disposal activities*):

Notes:

1. Suggested Conversion Factors: From Cubic Yards to Tons (Use when scales are not available)

   Asphalt: .61 (ex. 1000 CY Asphalt = 610 tons. Applies to broken chunks of asphalt)

   Concrete: .93 (ex. 1000 CY Concrete = 930 tons. Applies to broken chunks of concrete)

   Ferrous Metals: .22 (ex. 1000 CY Ferrous Metal = 220 tons)

   Non-Ferrous Metals: .10 (ex. 1000 CY Non-Ferrous Metals = 100 tons)

   Drywall Scrap: .20

   Wood Scrap: .16

1.1 SUMMARY

A. Section Includes: Administrative and procedural requirements for Contract closeout.

B. These requirements supplement those included in the General Conditions and are subject to modification upon mutual agreement between the Architect, Owner, and Contractor.

1.2 FINAL CLEANING

A. Immediately prior to completion and occupancy, remove marks, stains, fingerprints, dust, dirt and paint drippings resulting from work of this project, both interior and exterior including roofs, walls, floors, sidewalks, paving and other finished surfaces.

B. Contractor shall engage the services of an independent, professional cleaning service to perform final cleaning after Contractor's final clean-up is completed.

C. Materials:

1. Use only those cleaning materials that will neither create hazards to health or property, damage surfaces, and are in compliance with Proposition 65.
2. Use only those cleaning materials and methods recommended by manufacturer of the surface material to be cleaned.
3. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.
4. Use only environmentally acceptable "green" cleaning products.

D. Wash tile, plumbing and other fixtures clean.

E. Clean and polish hardware and other unpainted metals.

F. Remove temporary labels, tags and paper covering.

G. Glass, both interior and exterior, and mirrors shall be cleaned to the level expected by a professional window washer.

1.3 REQUIREMENTS PREPARATORY TO FINAL ACCEPTANCE

A. Temporary facilities shall be removed from site.

B. Plumbing equipment shall operate quietly and free from vibration. Properly adjust, repair, balance, or replace equipment producing objectionable noise or vibration in occupied areas of building. Provide additional brackets, bracing, etc., to prevent objectionable noise or vibration. Systems shall operate without humming, surging, or rapid cycling.

C. Operating instructions for equipment shall be properly mounted and posted.

D. Training: Provide training and orientation of Owner's operating staff in proper care and operation of equipment, systems and controls including:

1. Plumbing equipment.
2. Other systems as required in the specifications or needed to properly instruct Owner's representatives.
3. Three copies of certificate, signed by the Owner's representative, attesting to their having been instructed.

E. Record Survey shall be submitted as specified in Section 01 7839, Project Record Documents.

F. The following shall be submitted in accordance with Section 01 3300, Submittal Procedures.

1. Completed Record Drawings signed by Contractor and Inspector.
2. Maintenance and Operating instructions and manuals.
3. Certifications completed and signed.
4. Guarantees and warranties as specified and required by the General Conditions.

G. Contractor's Final Verified Report (Form DSA 6-C) and other Reports and Affidavits required by Division of State Architect shall be submitted; originals and one copy.

H. Extra Stock shall be delivered and acknowledged by the Owner in quantities specified.

1.4 PUNCH LIST

A. Prior to Architect's punch list, Contractor shall prepare and address initial deficiencies list for all work. Upon completion, this list shall be sent to the Architect.

B. Contractor shall notify Architect when Contractor, with concurrence of Inspector, feels project is complete enough for preparation of Architect's punch list.

C. Architect will then notify appropriate consultants including civil, mechanical and electrical engineers, landscape architect, food service designer and others as needed, to make their inspections and prepare "punch lists". Consultant "punch lists" will be completed before Architect will make its "punch list".

D. Architect will prepare a "punch list".

E. Punch lists will be published and site within 14 days of Architect's walk through.

F. Work on the punch list, except minor items as determined by the Architect, shall be completed prior to completion and occupancy.

1.5 FINAL ACCEPTANCE

A. After requirements preparatory to Final Acceptance have been completed as hereinbefore specified, Contractor shall notify Architect to perform acceptance tour.

Notice shall be given at least three days in advance of the time the acceptance tour is to be performed.

B. Contractor or its principal superintendents authorized to act in behalf of Contractor, shall accompany Architect and Inspector on acceptance tour, as well as any principal subcontractors that Architect may request to be present.

C. If work has been completed in accordance with Contract Documents, and no further corrective measures are required, Architect will recommend Final Acceptance to the Owner and initiate the filing of the Notice of Completion.

D. If work has been substantially completed in accordance with Contract Documents, and only minor corrective measures are required, Architect will recommend that Owner conditionally accept Project and file Notice of Completion based upon Contractor's assurance that corrective measures will be completed within shortest practicable time period (but absolutely not later than 30 days).

E. If work has not been substantially completed in accordance with Contract Documents, and several or many corrective measures are still required, Architect will recommend one or the other of the following:

1. That Owner accept Project and file Notice of Completion only upon receiving from Contractor a Cashier's Check in amount sufficient to account for corrective measures still required, in the event that Owner had to have others complete the work.
2. That Owner not accept project and not file Notice of Completion. Instead, based on information gathered from acceptance tour, Contractor will be required to complete all corrective measures and then call for another project acceptance tour following procedure outlined above.

F. Should any corrective measures remain incomplete at time final payment is due, Contractor shall provide Owner with Money Order(s) or Cashier's Check in exchange for retention. Money Order(s) or Cashier's Check shall be in an amount one and one-half times the agreed estimated cost as determined by the Architect.

G. Upon Final Acceptance of Project by Owner, Contractor shall submit his request for final payment, less retention. Retention payment will not be made by Owner until 35 days after board acceptance and filing of Notice of Completion with County Recorder, as specified in General Conditions.

H. Retention payment will not be made until Contractor has filed the required Form DSA 6-C with DSA with two original copies to the Architect.

1.6 CLOSEOUT CHECKLIST

A. The following items are to be fully completed and/or submitted as a condition for final acceptance of the project (as applicable)

1. Specifications and Plans Review for Closeout
2. Certificate of Chlorination and Sterilization

3. Certificate of Compliance for Building Materials
4. Contractor's Reuse, Recycling and Disposal Report
5. Environmental Product Certification as required under Section 01 3543
6. Roofing Certification
7. Certifications as required under Section 01 3300.
8. Operation & Maintenance Manuals
9. Guarantees/Warranties
10. Training
11. Record Drawings
12. Keys (from Contractor - properly labeled):
    a. toilet accessories
    b. extra door keys as required by specifications
13. Punch List Items Completed
14. Extra Stock of Specified Items, delivered to Owner (including documents)
15. Back charges Resolved
16. Removal of Stop Notices
17. Contractor's Final Verified Reports (DSA 6-C)

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Requirements for explicit warranties, guarantees, bonds, and service and maintenance contracts specified in the individual Sections and supplementing the requirements included in the General Conditions and Supplementary Conditions.
2. Guarantee and warranty period inspections.
3. Forms for Guarantees/Warranties.

1.2 RELATED REQUIREMENTS

A. Section 01 3300, Submittal Procedures; additional requirements and submittal procedures for guarantees/warranties.

1.3 DEFINITIONS

A. General: The following definitions apply to the language used in these Specifications.

B. Warranty: A representation or affirmative covenant that the work will be performed in accordance with certain standards stated in the Contract, such as in "a good and workmanlike manner," and otherwise be free of defects and in conformity with the Contract Documents for the duration noted or, if a duration is not indicated, the statute of limitations period for contract breaches will constitute the time frame for enforcement.

C. Guarantee: A provision of the warranty which becomes operative after completion of the work under the Contract and requires replacement of defective or non-conforming materials or equipment, or remedy improper workmanship, at the guarantors own cost and expense, for the duration noted under the General Conditions of the Contract or in the Specifications.

D. Standard Product Guarantees/Warranties: Preprinted written documents published by individual manufacturers for particular products and specifically endorsed by the manufacturer to the Owner.

E. Contractor Standard Guarantee: The Contractor’s guarantee for the term included in the General Conditions.

F. Subcontractor Standard Guarantee: A Subcontractor’s guarantee period that coincides with the term of the Contractor’s guarantee included in the General Conditions.

G. Special Guarantees/Warranties: Written guarantees/warranties required by or incorporated in the Contract Documents to be provided by the Contractor or its Subcontractors to either extend time limits of the Standard Guarantees/Warranties included in the General Conditions or to provide greater rights for the Owner.

1.4 GENERAL REQUIREMENTS

A. Guarantees/warranties between Contractor and manufacturers and between Contractor and suppliers shall not affect those issued to the Owner.

B. Contractor shall not be held responsible for defects due to misuse, negligence, willful damage, improper maintenance, or accident caused by others nor shall it be responsible for damaged parts whose replacement is necessitated by failure of Owner's maintenance forces to properly clean and service them, provided that Contractor has furnished complete operating and maintenance instructions to Owner.

C. By terms of each guarantee/warranty, unless otherwise specified or stipulated, also agree to remove and replace other work, as required, that has been connected to or superimposed on substrate material to be replaced.

D. In addition to other requirements specified:

1. Compile specified service and maintenance contracts.
2. Coexecute submittals when specified.
3. Review submittals to verify compliance with Contract Documents.
4. Submit to Architect for review and transmittal to Owner.

E. In case of items remaining incomplete after date of filing of the Notice of Completion, the guarantee/warranty period shall run from the date of acceptance of such items.

F. Special guarantees/warranties applicable to definite parts of the Work and as specifically stipulated in the respective Sections of the Specifications or other Contract Documents shall be subject to the terms of this Section.

G. If repairs or changes are required in connection with the work within a guarantee/warranty period, the Contractor shall, promptly upon receipt of notice from the Owner and without expense to the Owner, comply with the following:

1. Correct defects and place in satisfactory condition the work covered by the respective guarantee/warranty.
2. Repair, to the satisfaction of the Owner, damage to the Buildings and/or site that is the result of the cause for said repairs and changes.
3. Repairs and corrective work shall be made to the satisfaction of the Owner including the equipment and contents of the Buildings and/or site disturbed during performance of the guarantee/warranty work.

H. The Owner may, at its sole discretion, proceed with the correction work at Contractor’s expense if Contractor does not proceed with the corrective work within a reasonable time fixed by a written notice from the Owner.

1. As part of the corrective work, the Owner reserves the right to remove and store or dispose of defective equipment or material at Contractor’s expense.
2. If Contractor does not pay the costs of such removal and storage within ten days thereafter, the Owner may, upon ten additional days’ written notice, sell such

defective items and shall account for the net proceeds after deducting all the costs that should have been borne by the Contractor, including compensation for the Architect's additional services.

3. If the proceeds from the sale are insufficient to cover all amounts chargeable to Contractor, Contractor shall pay the difference to the Owner.

I. If repairs or changes are required in connection with guarantee/warranty work and notice is given within the guarantee/warranty period, the warranty shall continue until the corrective work has been completed, regardless of the termination of the specified guarantee/warranty period.

J. In case of work performed by subcontractors and where a special guarantee/warranty is required, guarantees/warranties addressed to and in favor of the Owner shall be secured from said subcontractors.

K. No provision in the Contract Documents or in any special or general guarantee/warranty shall be held to limit, as to time or scope of liability, the Contractor's liability for defects or the liability of its sureties to less than the legal limit of liability under laws having jurisdiction.

L. The delivery of any guarantees/warranties shall not relieve the Contractor from any obligation assumed under any other provision of the Contract Documents.

M. The obligation of the Contractor under this Section shall survive the termination of the Contract.

1.5 SUBMITTAL REQUIREMENTS

A. Assemble guarantees/warranties, bonds, and service and maintenance contracts executed by each of the respective manufacturers, suppliers, and subcontractors.

B. Format:

1. Size: 8-1/2-inch-by 11-inch sheets, punched for three-ring binder. Fold larger sheets to fit into binders.
2. Binders: Commercial quality, three-ring, "View" type, with durable and cleanable plastic covers.
3. Cover: Identify each packet with typed or printed title, "GUARANTEES/WARRANTIES," and list the title of Project and name of Contractor.

C. Contents:

1. Neatly typed, in orderly sequence.
2. Provide complete information for each item including:
    a. Product or work item.
    b. Firm name with name of principal, address, and telephone number.
    c. Beginning date and duration of warranty, bond, or service and maintenance contract.

3. Provide the following information for Owner's personnel:
   a. Proper procedure in case of failure.
   b. Circumstances that might affect the validity of guarantee/warranty or bond.
4. Contractor's name, name of responsible principal, address, and telephone number.

D. Refer to Section 01 3300, Submittal Procedures, for additional requirements.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 TIME OF SUBMITTALS

A. Typical: Within 30 days after filing date of Notice of Completion.

B. Equipment or component parts of equipment put into service during progress of construction; submit documents within 10 days after inspection and acceptance.

C. Items of work, where acceptance is delayed materially beyond date of filing date of Notice of Completion; provide updated submittal within 14 days after acceptance, listing date of acceptance as start of guarantee/warranty period.

3.2 GUARANTEE PERIOD INSPECTIONS

A. Contractor and subcontractors performing the construction work are required to guarantee workmanship and materials for the period noted in the Contract. Within a month of the end of such guarantee period, Contractor's agent shall prepare an inspection report indicating the condition of the Owner's facility and related common facility, itemizing the work to be completed, performed and/or corrected. Such guarantee period shall be continued in effect and extended until such time as Owner submits to Contractor written confirmation of the satisfactory completion of the itemized work, which confirmation shall be submitted within a reasonable period of time.

3.3 GUARANTEE/WARRANTY FORMS

A. Contractor Standard Guarantee: Submit the following written Standard Guarantee/Warranty form for the overall Work against defects in materials and workmanship for the period of guarantee/warranty required under the Contract after the filing of the Notice of Completion (included with this section).

B. Subcontractor Standard Guarantee: Submit the following written Standard Guarantee/Warranty form for Subcontracted Work against defects in materials and workmanship for the period of guarantee/warranty required under the Contract after the filing of the Notice of Completion (included with this section).

C. Subcontractor Special or Extended Guarantee/Warranty: Contractor shall have its Subcontractor submit the following Special Extended Written Guarantee/Warranty, typed

on Subcontractor's letterhead, when required by a Specification Section for a period in excess of 2 years (included with this section).

END OF SECTION

(Letterhead of Contractor)

STANDARD GUARANTEE / WARRANTY

for

_____

Project Name

_____

Contract No.

We hereby warrant that the Work we have provided under the above reference Contract has been completed in accordance with the Drawings, Specifications, and other Contract Documents.

Under the terms of this warranty, we agree to repair or replace any or all of our work, together with any other adjacent work which may be displaced or damaged by so doing, which may prove to be either patently defective in its workmanship or latently defective in its workmanship or materials within the period of 24 months from the date of filing of the Notice of Completion of the above named Project by the Board of Trustees of the School District, and we also agree to repair any and all damages resulting from such defects, without any expense whatsoever to said Board of Trustees, ordinary wear and tear and unusual abuse or neglect excepted.

In the event of our failure to comply with above-mentioned guarantee conditions within ten (10) day after being notified in writing by the Owner, we collectively and separately do hereby authorize the Owner to have said defective work and damages repaired or replaced and made good at our expense and will honor and pay the costs and charges therefore upon demand.

SIGNED (Contractor) _____

_____

(Address)

_____ _____

(Printed Name of Authorized Representative) Signature

_____ _____

(License Number) (Date of Signing)

COUNTERSIGNED (Owner) _____

_____ _____

(Printed Name of Authorized Representative) Signature

Date of Filing or Notice of Completion: _____

(Letterhead of Company)

SUBCONTRACTOR STANDARD GUARANTEE / WARRANTY

We hereby warrant that

_____

which we have provided in _____
Name of Project

for _____
District

has been completed in accordance with Specification Section _____ and requirements of the Contract Documents.

Under the terms of this warranty, we agree to repair or replace any or all of our work, together with any other adjacent work which may be displaced or damaged by so doing, which may prove to be either patently defective in its workmanship or latently defective in its workmanship or materials within a period of 24 months from date of filing the Notice of Completion of the above-named Project by the Board of Trustees of the School District without any expense whatsoever to said Board of Trustees, ordinary wear and tear and unusual abuse or neglect excepted.

In the event of our failure to comply with above-mentioned guarantee conditions within ten (10) day after being notified in writing by the Owner, we collectively and separately do hereby authorize the Owner to have said defective work and damages repaired or replaced and made good at our expense and will honor and pay the costs and charges therefore upon demand.

SIGNED (Subcontractor)

_____
(Name)

_____
(Address)

_____

_____ _____
(License Number) (Date of Signing)

COUNTERSIGNED (General Contractor)

_____
(Name)

_____
(Address)

_____

_____ _____
(License Number) (Date of Signing)

(Letterhead of Company)

SPECIAL EXTENDED WRITTEN GUARANTEE / WARRANTY

We hereby warrant that

_____

which we have provided in _____
Name of Project

for _____
District

has been completed in accordance with Specification Section _____ and requirements of the Contract Documents.

Under the terms of this warranty, we agree to repair or replace any or all of our work, together with any other adjacent work which may be displaced or damaged by so doing, which may prove to be either patently defective in its workmanship or latently defective in its workmanship or materials within a period of _____ year(s) from date of filing the Notice of Completion of the above-named Project by the Board of Trustees of the School District without any expense whatsoever to said Board of Trustees, ordinary wear and tear and unusual abuse or neglect excepted. We also agree to repair any and all damages resulting from such defects.

In the event of our failure to comply with above-mentioned conditions within a reasonable time but in no case longer than ten (10) calendar days after being notified in writing by the Owner, we collectively and separately do hereby authorize the Owner to have said defective work and damages repaired or replaced and made good at our expense and will honor and pay the costs and charges therefore upon demand.

SIGNED (Subcontractor)

_____
(Name)

_____
(Address)

_____

_____ _____
(License Number) (Date of Signing)

COUNTERSIGNED (General Contractor)

_____
(Name)

_____
(Address)

_____

_____ _____
(License Number) (Date of Signing)

PART 1 - GENERAL

1.1 INCLUSION OF OTHER CONTRACT DOCUMENTS

A. The General Conditions, Supplementary Conditions and Division 1 are fully applicable to this Section, as if repeated herein.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 02 4119, Selective Demolition.

B. Section 09 9100, Painting.

1.3 SCOPE OF WORK

A. This specification section includes the Scope of Work and Lead-Based Paint Specification Requirements for the handling, monitoring and clean-up of lead paint.

B. Contractor shall assume all existing paint on this project contains lead.

C. Contractor is to prepare existing painted surfaces for application of new painting or finishing systems where called for elsewhere in these documents as described herein.

D. Contractor shall be responsible for properly disposing of all removed hazardous material and provide certification of such to the Owner.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

- END OF SECTION -

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Painting and painter's finish on all exposed exterior and interior surfaces, except prefinished items and unless otherwise noted, as required to complete finishing of the Work. The Work includes, but is not necessarily limited to, the following specific items:

1. Paint, stain or otherwise finish all new surfaces.
2. Back priming of concealed surfaces, except as otherwise specified.
3. Paint, repaint or finish of existing painted surfaces altered, defaced or damaged as a result of work of this Contract.
4. Paint site items which are not prefinished, including posts, screens, panels, bollards, supports, rails and other similar improvements.
5. Unpainted or unfinished exposed building components, pipes and conduit, including sprinkler piping, and metal ductwork, which run exposed across finished or painted surfaces.

B. Surface treatment, priming and coats of paint specified in this Section are in addition to shop priming and surface treatment specified under other Sections unless otherwise noted.

C. Items Not Included in This Section:

1. Factory and shop-prefinished items as specified in various Sections.
2. Painting specified elsewhere and included in respective Sections, including but not necessarily limited to shop priming.

1.2 WORK NOT TO BE PAINTED UNLESS OTHERWISE INDICATED

A. Exposed exterior concrete and concrete slab surfaces, except as noted.

B. Unfinished masonry, except where noted.

C. Suspended acoustical ceilings and acoustical tile, except as noted.

D. Pre-finished casework and other factory and shop-prefinished items as specified in various Sections.

E. Finish hardware except prime coated items.

F. Items typically not to be painted including, but not limited to, the following:

1. Glass.
2. Ceramic tile.
3. Membrane roofing.
4. Safety nosings.

5. Resilient floor covering and base.
6. Carpet.
7. Pre-finished paneling.
8. Plastic laminate.
9. Porcelain enamel.
10. Vinyl wallcovering, except where noted.

G. Aluminum doors, windows, frames and railings.

H. Metal or plastic toilet partitions.

I. Items of chromium, copper, nickel, brass, bronze or stainless steel.

J. Surfaces in concealed areas such as furred spaces.

K. Tops of gravel stop flanges (including priming) where roofing material will be adhered to.

L. Wall areas concealed by cases, counters, cabinets, chalkboards, tackboards (prime coat only required).

M. Piping or conduit including brackets and similar items therewith running on or across unpainted or otherwise unfinished walls or ceilings**.**

N. Galvanized gratings, recessed foot grilles, and thresholds.

O. Structural steel scheduled to receive fireproofing.

P. Existing rooms or areas not affected by work of this project, unless specifically noted otherwise.

1.3 RELATED REQUIREMENTS

A. Section 01 6116, Volatile Organic Compound (VOC) Restrictions; for VOC limits pertaining to adhesives, sealants, fillers, primers, and coatings.

B. Section 01 8113, Sustainable Design Requirements, for CAL-Green general requirements and procedures.

C. Section 07 9200, Joint Sealants.

1.4 REFERENCES AND STANDARDS

A. California Building Code (CBC), edition as noted on the Drawings, as adopted by the California Division of the State Architect (DSA).

B. California Green Building Standards Code (CAL Green), edition as noted on the Drawings, as adopted by the California Division of the State Architect (DSA).

C. ASTM International (ASTM):

1. D523: Standard Test Method for Specular Gloss.

2. D4263: Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method.
3. D6386: Standard Practice for Preparation of Zinc (Hot-Dip Galvanized) Coated Iron and Steel Product and Hardware Surfaces for Painting.
4. D7396: Standard Guide for Preparation of New, Continuous Zinc-Coated (Galvanized) Steel Surfaces for Painting.

D. Master Painters Institute (MPI):

1. Architectural Painting Manual Guide Specification.

E. The Association for Materials Protection and Performance (AMPP):

1. SSPC-Society for Protective Coatings/ National Association of Corrosion Engineers International (NACE):
   a. SSPC-SP 1: Solvent Cleaning.
   b. SSPC SP-10/NACE No. 2: Near-White Metal Blast Cleaning.
   c. SSPC-SP 16: Brush-Off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-Ferrous Metals.

1.5 ADMINISTRATIVE REQUIREMENTS

A. Submittal Procedures:

1. Action Submittals and Informational Submittals shall be submitted in accordance with Section 01 3300, Submittal Procedures.
2. Closeout Submittals shall be submitted in accordance with Section 01 7700, Closeout Procedures.
3. Sustainable Design Submittals shall comply with the additional requirement of Section 01 8113, Sustainable Design Requirements.

1.6 ACTION SUBMITTALS

A. Product Data: Submit list and complete descriptive data of products proposed for use. Include manufacturer's specifications, published warranty or guarantee, and application instructions. Cross-reference to paint system and locations of application areas.

B. Samples:

1. Appropriately label and identify each sample, including location and application. Include Architect's number as scheduled on the Drawings, manufacturer's name, color number, and gloss units.
2. Prepare on 8 inch x 10 inch card stock for selected colors and finishes.
3. Submit sufficiently ahead of work progress to allow for color board assembly and distribution.
4. Resubmit as requested until required sheen, color, and texture are approved.

1.7 INFORMATIONAL SUBMITTALS

A. Statement of applicator qualifications.

B. Sustainable Design:

1. General:
   a. Submit information necessary to establish and document compliance with the California Green Building Standards Code.
   b. Sustainable design submittals are in addition to other submittals.
2. The following information shall be provided:
   a. Paints and Coatings: Evidence of compliance that products meet maximum VOC content limits specified in Section 01 6116.

1.8 CLOSEOUT SUBMITTALS

A. Guarantee: Submit Subcontractor’s guarantee.

1.9 MAINTENANCE MATERIAL SUBMITTALS

A. At completion of the Work, deliver to Owner extra stock of paint of each color used in each coating material used.

B. Containers shall be full, tightly sealed, and clearly marked.

C. Provide the following quantities:

1. Field Colors: 1 one-gallon container.
2. Accent Colors: 1 one-gallon container.

1.10 QUALITY ASSURANCE

A. Use only new materials and products.

B. Single-Source Responsibility:

1. To the maximum extent practicable, select a single manufacturer to provide all materials required by this Section, using additional manufacturers to provide systems not offered by the selected principal manufacturer.
2. For each individual system:
   a. Provide primer and other undercoat paint produced by same manufacturer as finish coat.
   b. Use thinner within manufacturer's recommended limits.

C. Source Quality Control: Material shall be best grade products of type specified and listed below as regularly manufactured by these manufacturers. Materials not bearing manufacturer's identification as standard "best grade product" of their regular line will not be considered for use.

D. Materials, components, assemblies, workmanship and installation are to be observed by the Owner's Project Inspector. Work not so inspected is subject to uncovering and replacement.

E. Materials and application procedures shall comply with local, state and federal air pollution control regulations.

F. Manufacturer's representative from coating supplier shall visit the site prior to application to review and approve the specified systems. Discrepancies or recommended changes shall be submitted to the Architect for consideration prior to finalization of submittal.

1.11 DELIVERY, STORAGE AND HANDLING

A. Deliver undamaged products to job in manufacturer's sealed containers and/or original bundles with tags and labels intact.

B. Store materials in protected, clean, dry conditions off of ground and in areas which will not interfere with the progress of the Work.

C. Transport, store and handle in strict accordance with the manufacturer's written recommendations and as specified below.

D. Remove paint-soiled rags and waste from premises at end of each day's work or store in metal containers with metal covers.

E. Paint stored at site, shall be in separate structure not less than 60 feet from any other building or structure. Remove empty containers and soiled rags as they accumulate. At completion, remove structure, cleanup area, and leave in original condition.

1.12 FIELD CONDITIONS

A. Do not apply paints and coatings under conditions which jeopardize quality or appearance of painting or finishing.

B. Cover or otherwise protect finished work of other trades and surfaces not being painted concurrently or not to be painted.

C. Exterior:

1. Comply with manufacturer's recommendations as to environmental conditions under which coatings and coating systems can be stored and applied.
2. Do not apply exterior paint when air or surface temperature is under 50 degrees F or when air or surface temperature will be below 50 degrees F for 48 hours after painting.
3. Do not apply immediately following snow, rain, dew or during foggy weather.
4. Do not apply when temperature is over 85 degrees F except in protected or shaded areas.

D. Interior:

1. Do not apply interior paint when air or surface temperature is below 50 degrees F unless temperature is maintained constantly.
2. Do not apply when ventilation is inadequate to maintain humidity lower than dew point of coldest wall.

E. Use moisture meter for determining proper moisture levels of surfaces for painting.

F. Report to Architect in writing upon discovery of any prime coat painting specified in other Sections of Specifications that would prevent proper application of specified finish.

G. Furnish, erect and remove scaffolding and planks required for work under this Section. Conform to state and local codes, rules and regulations.

1.13 EXISTING CONDITIONS

A. Existing Surfaces:

1. Paint, stain or otherwise finish all existing surfaces as indicated or scheduled on the Drawings.
2. Work includes primer, paint, repaint or finish of existing painted surfaces altered, defaced or damaged as a result of work under this Contract.

B. Existing surfaces with paint, stain, varnish or similar type coating shall be assumed to contain various concentrations of lead. Cal/OSHA regulations are therefore applicable during disturbance, preparation or repainting of these surfaces.

C. Existing surfaces to be painted include:

1. Exterior wall surfaces, including fascia, trim.
2. Soffits and exterior ceilings including exposed roof framing.
3. Doors and frames, both wood and metal.
4. Window frames, trim and solid infill panels except unpainted or prefinished aluminum.
5. Exposed conduit, piping, brackets, supports, and similar metal fabrications.
6. Downspouts and gutters.
7. Parapet caps and exposed flashings.
8. Mechanical well walls, all surfaces.
9. Concrete foundation where exposed below painted wall surfaces.
10. Roll-up doors and frames.
11. Closure panels between relocatable buildings.
12. Enclosure walls, screen walls, equipment yards.
13. Other work as shown on the Drawings, specified, or as required for a complete Project.

1.14 GUARANTEE

A. Contractor: Under conditions of its Guarantee under the Contract, paint colors shall be substantially unchanged and finishes shall maintain their original adherence without

showing blisters, flaking, peeling, scaling, staining or unusual deterioration or other defects.

PART 2 - PRODUCTS

2.1 DESIGN AND PERFORMANCE CRITERIA

A. Sustainable Design:

1. VOC emissions for field-applied paints and coatings must comply with limits specified in Section 01 6116.

2.2 MANUFACTURERS AND COATING PRODUCTS

A. Products are specified under "Paint Systems" in Part 3 below and are manufactured by Kelly-Moore, except as otherwise indicated. Equivalent products to those scheduled manufactured by Sherwin-Williams, PPG Architectural Finishes, Glidden Professional, Benjamin Moore & Co., Dunn-Edwards, Vista, or equal, are acceptable.

B. Materials selected for coating systems for each type surface shall be the product of a single manufacturer or shall be acceptable to manufacturer of finish coating for system.

C. If more than one quality level of product type is marketed, use material of highest quality.

2.3 MIXING AND TINTING

A. Deliver paints and stains ready mixed to jobsite. On-site color mixing or tinting will not be allowed.

B. Each kind of coating for paint finishes shall be factory-mixed to match approved samples, colors, and ready for immediate application.

C. Mix proprietary products in strict accordance with manufacturer's printed directions.

D. Thinning, if permitted by manufacturer for a specific coating, shall be in accordance with manufacturer’s instructions. Thinning of other products shall be in accordance with standard practice.

2.4 COLORS

A. Architect will prepare a color schedule with samples for guidance of painter and reserves right to select, allocate, and vary colors on different surfaces throughout building.

1. Colors selected by Architect may be from manufacturer's full range standard palette or be custom mixed.
2. Unless otherwise indicated on the Drawings, different colors will be selected for different materials such as walls, trim, and doors.

B. Colors to be selected by the Architect, or where scheduled on the Drawings, are solely for the purpose of conveying color information and do not imply manufacturer's approval

or waiver of the requirement that all coatings be from the same manufacturer, unless a specific system is not available from the primary manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Prior to the work of this Section, carefully inspect and verify that the installed work of all other trades is complete to the point where this work may properly commence.

B. Verify that painting may be performed in accordance with the approved design.

C. In the event of discrepancy, immediately notify Architect. Do not proceed in discrepant areas until discrepancies have been fully resolved.

3.2 PREPARATION

A. General:

1. Surface preparation and product application shall be in accordance with manufacturer's printed instructions.
2. In addition to prime coats indicated (primer, sealer, filler, undercoat), use two finish coats minimum, and additional coats as required for complete coverage and good appearance of scheduled finish coat.
3. Surfaces to receive new finish shall be properly prepared prior to application of finish coatings.
4. Do not apply paint, enamel, stains or varnishes to wet, damp, dusty, finger-marked, rough, unfinished, or defective surfaces until such defects have been corrected.

B. Wood - Interior:

1. Thoroughly sandpaper and dust off woodwork; putty nail holes, cracks, and other defects after first coat to match color of paint. Putty where finish will be clear.
2. First coat on wood surfaces shall be sanded smooth. Other coats, except finish coat, shall be lightly sanded and dusted before and between each coat.
3. Smoothing, rubbing and sand-papering shall be sufficient to insure good results. Sand down all raised grain or rough surfaces and re-coat. Knots, pitch pockets and sappy portion of wood, all nail holes, cuts, cracks and other defects in wood shall have any necessary extra treatment to provide proper paint base.

C. Wood – Exterior:

1. Surfaces shall be dry and free of grease and splatters.
2. Rough surfaces shall be sanded smooth. Do not sandpaper resawn surfaces.
3. At opaque finish, fill nail holes, cracks, open joints, and other defects with filler after priming coat has dried. Exposed nail heads shall be spot primed.
4. Avoid painting surfaces while exposed directly to hot sun.

5. Smooth surfaces shall be sanded thoroughly to allow proper penetration and adhesion. Areas exhibiting tannic acid staining shall receive two coats of primer waiting 24 hours between coats. Sand and prime as soon as possible after installation to avoid UV degradation of unpainted wood surface.
6. Mildew, if present, shall be removed by scrubbing with a commercial mildew wash in accordance with manufacturer's directions.

D. Metals-General:

1. On metal work, only such sanding will be required as is necessary to provide for complete bonding of coats.
2. Steel and ironwork shall be scraped clean of scale, and rust and any grease shall be entirely removed.
3. Touch-up scratched and damaged places on metal priming coats.
4. Galvanized or zinc-coated metal shall be given an approved acid treatment 48 hours before paint is applied.
5. Prep and prime coat factory or shop primed metal products, including metal doors and frames, exposed framing, and other exposed metal if material was not shop primed.
6. Metal surfaces receiving epoxy coatings shall have stripe coat applied at all welds, edges, joints, etc., with epoxy primer prior to application of primer.

E. Metals–Galvanized Surfaces:

1. Surfaces shall be cleaned, and profiled where specified, prior to receiving applied coatings in accordance with ASTM D6386 or ASTM D7396 for sheet products.
    a. Methods shall be selected based on age of galvanized coating, condition of surface and intended paint coating.
    b. Care shall be taken not to damage the zinc coating.
    c. Do not use phosphate treatment on galvanized surfaces scheduled to receive zinc-rich primers.
2. Comply with additional recommendations included in the AGA document “Duplex Systems: Painting Over Hot Dip Galvanized Steel.”
3. Comply with any additional procedures required by the coating manufacturer.

F. Gypsum Board:

1. General:
    a. Fill narrow, shallow cracks and small holes with spackling compound.
        1) Rake deep, wide cracks and deep holes.
        2) Dampen with clear water.
    b. Fill with thin layers of drywall joint cement.
    c. Allow to dry.
    d. Sand smooth after drying. Do not raise nap of paper on gypsum board.
2. Gypsum Board to Receive Wall Covering and Carpeting:

a. Prep and prime surfaces scheduled to receive wall covering with scheduled primer. Refer to Section 09 7200, Wall Covering, for clear acrylic primer to be used at vinyl wall covering.

b. Sprayed applications of primer shall be back rolled to assure that the primer has thoroughly sealed the surface.

G. Concrete:

1. Cracks, gaps, hollow areas, bug holes, honey combs, voids, fins, form marks and other protrusions or rough edges are to be ground or stoned to provide a smooth continuous surface.
2. Imperfections may require filling.
   a. Patch concrete areas with cracks, gaps, hollow areas or other imperfections with compatible material to provide smooth continuous surface.
   b. Material shall be compatible with and as recommended by the coating manufacturer.
3. Moisture Content:
   a. Prepared surfaces shall not be painted until they have completely cured and have stabilized moisture content within limits required by the coating manufacturer.
   b. Testing for Moisture Vapor Emission Rate (MVER) shall be performed to verify suitability using a moisture meter, Delmhorst or equal, or method described in ASTM D4263.
4. Surface shall be reviewed by Architect after surface preparation is complete and prior to application of primer. Additional patching and/or grinding necessary to provide a visually acceptable surface after application of paint coatings shall be accomplished at no additional cost.

H. Surfaces that cannot be prepared or painted as specified, or to level required by the coating manufacturer, shall be immediately brought to the attention of the Architect, in writing.

1. Starting of work without such notification will be considered acceptance by the Contractor of surfaces involved.
2. Replace unsatisfactory work caused by improper or defective surfaces, as directed by Architect.

3.3 REPAINTING EXISTING INTERIOR SURFACES

A. Interior surfaces required to be repainted, except acoustic tile, shall be prepared as follows.

1. Wash clean with solution of trisodium phosphate in water and thoroughly rinse or wash with approved self-neutralizing detergent.
2. Spackle, patch, sandpaper, repair, spot or partially prime to provide "hold out" for finish coats of paint and otherwise properly prepare as necessary to provide suitable surfaces, reasonably equal to new, over which to apply specified paints.

B. Wall Covering:

1. Check wall covering for adhesion. Loose seams and/or edges shall be reattached prior to painting.
2. Holes, cracks and imperfections shall be filled flush with surface.

3.4 REPAINTING EXISTING EXTERIOR SURFACES

A. General:

1. Exterior surfaces required to be re-painted, shall be power washed with surfactant, followed by rinsing to remove all loose coatings, chalk, dirt, efflorescence, oils, and other contaminants that would inhibit bond of new coating.
2. Mold or mildew shall be treated with bleach solution followed by thorough rinsing.
3. Protect openings into interior spaces during power washing including louvers, vents, vent screeds, grilles, to prevent water from entering interior areas including, attics and soffits.

B. Ferrous Metal: Steel framing, metal doors and frames, louvers, metal ductwork, and similar Items:

1. Remove all flaking, peeling and poorly bonded coatings, including rust from metal surfaces using power tool sanders or equivalent equipment. Feather edge remaining coatings.
2. Solvent scrub with MEK, all exposed bare metal, shop applied pretreatment and chalked coatings.
3. Spot prime exposed bare metal and metal pre-treatment prior to application of specified prime coat.

C. Galvanized Metal: Down spouts, wall caps, and Other Exposed Galvanized Metal.

1. Remove all loose, flaking or peeling coatings by scraping, chipping or sanding. Feather all rough edges by sanding.
2. Apply phosphoric acid etch pre-treatment to exposed galvanized metal.

D. Plaster and Concrete Masonry:

1. Remove loose coatings using hand or power tools.
2. Patch plaster areas where original material has cracked, spalled or otherwise been removed with compatible material. Fill areas completely to provide smooth, even surface for refinishing. Spot prime patches prior to proceeding.
3. Patch masonry joints with cracks or missing material with compatible materials.

E. Wood Siding and Trim:

1. Remove loose, flaking or peeling coatings by scraping, chipping or sanding. Feather rough edges by sanding.
2. Surfaces that exhibit moderate to heavy chalk deposits shall be thoroughly cleaned to sound substrate by wire brushing, sanding, or power washing.
3. Spot prime bare wood, exposed nail and fastener heads prior to application of specified prime coat.

4. Glossy surfaces shall be dulled by sanding. Crystalline deposits shall be removed by flushing with water from a hose.
5. Mildew, if present, shall be removed by scrubbing with a commercial mildew wash in accordance with manufacturer's directions.

F. Concrete:

1. Existing exposed concrete scheduled to receive new finish shall be pressure washed or scrubbed to completely remove all bond breakers and oils.
2. Remove loose coatings not removed by pressure washing using hand or power tools.
3. Efflorescence to be removed following procedures recommended by the paint manufacturer.
4. Cracks, gaps, hollow areas, bug holes, honey combs, voids, fins, form marks and other protrusions or rough edges are to be ground or stoned to provide a smooth continuous surface.
5. Imperfections may require filling.
   a. Patch concrete areas with cracks, gaps, hollow areas or other imperfections with compatible material to provide smooth continuous surface.
   b. Material shall be compatible with and as recommended by paint manufacturer.
6. Test for moisture as specified for new concrete.
7. Surface shall be reviewed by Architect after patching is complete and primer is applied. Additional patching and/or grinding necessary to provide a visually acceptable surface shall be accomplished at no additional cost.

G. Stained Wood Surfaces:

1. Thoroughly sand all surfaces.
2. Fill holes, cracks and defects after first coat with color matched putty.
3. Sand between coats to ensure proper adhesion.

H. Casework to be Refinished: For painted casework, refer to Article 3.2. For lacquer or varnish systems, sand all exposed surfaces and both sides of all doors thoroughly.

I. Exterior Ceramic Tile: Abrade surface to receive paint. Thoroughly power-sand all surfaces to remove smooth and/or glossy finish.

3.5 CAULKING

A. Caulk all cracks in finished surfaces.

B. Seal around any wall openings where original sealant is not fully sealing.

C. Provide 3/8 inch sealant around all steel columns at concrete base prior to painting.

D. Provide sealant at material transitions and intersections as required.

3.6 PROTECTION

A. Hardware, fixture canopies, outlet covers, switch plates and other such items shall be removed or loosened and replaced after completing work as required for painting and finishing. Protect items until reinstalled.

B. Protect work and work of others during progress against damage. Leave such work clean and whole. Correct damage by cleaning, repairing, replacing or repainting as directed.

C. Provide necessary drop cloths for protection of work. Cover finished surfaces adjacent to work.

3.7 APPLICATION

A. General:

1. Do not apply initial coating until moisture content of surface is within limitations recommended by paint manufacturer.
2. Apply coatings in accordance with manufacturer's recommendations and the additional requirements, as applicable, of the Architectural Painting Manual Guide Specifications for application methods and paint systems.
3. Flow coat on evenly and well brushed in. Should dead spots occur, touch-up before next coat is applied. Should spots or cracks burn through after final coat is applied, apply additional coats to entire surface as necessary to remedy defects.
4. Rate of application shall be within limits recommended by paint manufacturer for surface involved.

B. Thicknesses: Rate of application shall be within limits recommended by paint manufacturer for surface involved and comply with the following.

1. Paint materials shall be applied in manner to average 1.5 to 3 Dry Mils in thickness for the total number of coats scheduled.
2. Provide Tooke Dry Mill Coating Inspection Gauge manufactured by Micro Metrics Company to the Project Inspector for inspection of finished coating systems, if requested.

C. Refinish whole area where portion of finish is not acceptable.

D. Adjust natural finishes as necessary to obtain identical appearance on veneers and solid stock.

E. Equipment adjacent to walls shall be disconnected, using workers skilled in appropriate trades, and moved to permit wall surfaces to be painted. Following completion of painting, they shall be expertly replaced and reconnected.

F. Top and bottom edges of all doors shall receive same paint system finish required for door faces.

G. Do not paint over fire-rating labels, fusible links, or sprinkler heads.

3.8 DEFECTIVE WORK

A. Painter shall be responsible for damage or unsuitable work, including that caused by improperly prepared surfaces. Refinishing shall be at no cost to the Owner. Repair work damaged during construction; touch-up or refinish as necessary any abraded, stained or otherwise damaged surfaces.

3.9 CLEANING AND PROTECTION

A. Thoroughly clean any drips, splatters, spills, splashes, etc., from walls, floor or other surfaces, with no damage to those surfaces.

B. Protect work and materials of this Section prior to and during installation, and protect the installed work and materials of other trades.

C. In the event of damage, make all repairs and replacements necessary to the approval of the Architect at no additional cost to the Owner.

3.10 PAINT SYSTEMS

A. General:

1. Only major areas are scheduled, but miscellaneous and similar items and areas within room or space shall be treated with suitable system.
2. This Specification shall serve as guide and is meant to establish procedure and quality. Confer with the Architect to determine exact finish desired.
3. Number of coats scheduled is minimum. Additional coats shall be applied at no additional cost as required to hide base material completely, produce uniform color, and provide required and satisfactory finish.

B. Gloss and Sheen Ratings: Paint gloss shall be defined as the sheen rating of applied paint, in accordance with the following limits in conformance with Master Painters Institute, Inc. (MPI) Standards according to ASTM D523. Not all of the Gloss Levels are necessarily scheduled or used on this Project.

Gloss Level	Description	Units @ 60 degrees	Units @ 85 degrees
G1	Matte or Flat finish	0 to 5	10 max.
G2	Velvet finish	0 to 10	10 to 35
G3	Eggshell finish	10 to 25	10 to 35
G4	Satin finish	20 to 35	35 min.
G5	Semi-Gloss finish	35 to 70	
G6	Gloss finish	70 to 85	
G7	High-Gloss finish	> 85	

C. Clarification of System Terminology:

1. Interior paint Systems are specified and identified herein by initial letters “INT.”
2. Exterior paint Systems are specified and identified herein by initial letters “EXT.”

3. The numbers following “INT” and “EXT” for each System identifies the substrate to be coated.
4. Initial numbers for each System identify the substrate to be coated summarized as follows with further clarification included with the System description:

CODE	DESCRIPTION
3.1	Concrete
3.2	Cement Plaster
4	Masonry
5	Metal
6	Wood
9.2	Gypsum Board
9.3	Acoustical Panels and Tile

5. The letter following substrate number identifies the general finish coat chemistry summarized as follows:

CODE	DESCRIPTION
A	Standard acrylic
B	Non-bridging vinyl acrylic
C	Epoxy-like acrylic
D	Semi-transparent stain
E	Elastomeric
F	High performance epoxy-like acrylic
G	Lacquer
H	Aliphatic urethane
I	Fire Retardant Intumescent
J	Acrylic Urethane
K	PVA primer
L	Acrylic primer
M	Premium performance acrylic polymer

6. Hyphenated suffix identifies the topcoat gloss level.

3.11 INTERIOR PAINTING SYSTEMS

INT 3.1A-3
Acrylic on Concrete - Gloss Level 3

1 coat	971 AcryPlex	Vinyl Acrylic Primer (if not previously painted)
2 coats	1010 Premium Professional	Latex Eggshell

INT 3.2A-3
Acrylic on Interior Cement Plaster- Gloss Level 3

1 coat	971 AcryPlex	Vinyl Acrylic Primer (if not previously painted)
2 coats	1010 Premium Professional	Latex Eggshell

INT 4.1A-1
Acrylic on Concrete Unit Masonry - Gloss Level 1; at theater stage

1	coat	521 Color Shield	Acrylic Block Filler (if not previously painted)
2	coats	Speedhide 6-753 by PPG Architectural Finishes	Acrylic Latex Flat Black

INT 4.1A-3
Acrylic on Concrete Unit Masonry - Gloss Level 3; unless otherwise indicated.

1	coat	521 Color Shield	Acrylic Block Filler (if not previously painted)
2	coats	1010 Premium Professional	Latex Eggshell

INT 4.1A-5
Acrylic on Concrete Unit Masonry - Gloss Level 5; in toilet rooms / food service areas

1	coat	521 Color Shield	Acrylic Block Filler (if not previously painted)
2	coats	1050 Premium Professional	Latex Semi-Gloss

INT 5.1A-5
Acrylic on Exposed Steel, Not Shop Primed - Gloss Level 5

1	coat	5725 DTM	Acrylic Primer
2	coats	1050 Premium Professional	Latex Semi-Gloss

Note: Modify scheduled finish coat if lower gloss level is selected by Architect.

INT 5.2A-5
Acrylic on Shop Primed Metal Including Hollow Metal Doors & Frames - Gloss Level 5

2	coats	1050 Premium Professional	Latex Semi-Gloss

Note: Modify scheduled finish coat if higher or lower gloss level is selected by Architect.

INT 9.2A-3
Acrylic on Gypsum Board, textured finish - Gloss Level 3

1	coat	971 AcryPlex	PVA Primer/Sealer
2	coats	1010 Premium Professional	Latex Eggshell

INT 9.2A-5
Acrylic on Gypsum Board, smooth finish - Gloss Level 5

1	coat	971 AcryPlex	PVA Primer/Sealer
2	coats	1050 Premium Professional	Latex Semi-Gloss

Note: Provide additional topcoat at toilet rooms and food service areas.

3.12 EXTERIOR PAINTING SYSTEMS

EXT 3.1A-2
Acrylic on Concrete - Gloss Level 2

1	coat	247 AcryShield	Acrylic Masonry Primer
2	coats	1210 Premium Professional	100% Acrylic Low Sheen

EXT 3.2A-2
Acrylic on Cement Plaster - Gloss Level 2

1 coat	247 AcryShield	Acrylic Masonry Primer
2 coats	1210 Premium Professional	100% Acrylic Low Sheen

EXT 3.1F-3
Elastomeric on Portland Cement Plaster: As specified in Section 09 9653, Elastomeric Coatings.

EXT 4.1A-2
Acrylic on Concrete Unit Masonry - Gloss Level 2

1 coat	247 AcryShield	Acrylic Masonry Primer
2 coats	1210 Premium Professional	100% Acrylic Low Sheen

EXT 5.1A-5
Acrylic over Unprimed Steel - Gloss Level 5

1 coat	5725 DTM	Metal Primer
2 coats	1215 Premium Professional	100% Acrylic Semi-Gloss

EXT 5.2A-5
Acrylic over Shop Primed Metal Doors and Frames, Steel Frame, Mechanical and Electrical Equipment, and Panels - Gloss Level 5

2 coats	2888 DuraPoxy HP	Acrylic Urethane Semi-Gloss

EXT 5.3A-5
Premium Acrylic over Waterborne Primer on Galvanized Metal – Gloss Level 5

Pretreatment	SSPC SP-1	Heavy-duty cleaner
1 coat	5725 DTM	Acrylic Primer
2 coats	1215 Premium Professional	100% Acrylic Semi-Gloss

Note: Provide pretreatment and primer if preparation and primer not applied in shop.

EXT 5.4A-5
Acrylic over Waterborne Primer on Aluminum – Gloss Level 5

Pretreatment	Devoe Devprep 88	Heavy-duty cleaner
1 coat	5725 DTM	Acrylic Primer
2 coats	1215 Premium Professional	100% Acrylic Semi-Gloss

Note: Provide pretreatment and primer if preparation and primer not applied in shop.

EXT 5.5A-5
Acrylic over Thermoplastic Olefin (TPO) Coated Metal – Gloss Level 5

1 coat	Carlisle “Low VOC TPO Primer”	Solvent based as provided by roofing manufacturer
2 coats	1250 AcryShield	100% Acrylic Semi-Gloss

EXT 6.3A-5
Acrylic on Dressed Lumber - Gloss Level 5

1 coat	255 AcryShield	100% Acrylic Wood Primer
2 coats	1215 Premium Professional	100% Acrylic Semi-Gloss

Note: Provide primer if not applied in shop.

3.13 MISCELLANEOUS PAINTING

A. Mechanical and Electrical Equipment, Conduits and Piping: Paint exposed items as scheduled using appropriate system for material and whether or not item has been factory-primed.

B. Exposed Insulation-Covered Piping: Size with Arabol, or equal latex type adhesive, and apply 2 coats of semi-gloss enamel.

C. Material Visible through Grilles, Screens, Louvers, Vents and Screens and Exposed Hardware Cloth Screening: Painted flat black to make them as unnoticeable as possible.

D. Mechanical Equipment: Paint mechanical equipment housings where indicated on the Drawings.

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Code required signage.
2. Exterior building identification and other non-code signage.

1.2 RELATED REQUIREMENTS

A. Section 01 6116, Volatile Organic Compound (VOC) Restrictions; for VOC limits pertaining to adhesives, sealants, fillers, primers, and coatings.

B. Section 01 8113, Sustainable Design Requirements, for CAL-Green general requirements and procedures.

C. Signage requirements included on the Drawings.

1.3 REFERENCES AND STANDARDS

A. California Building Code, edition as noted on the drawings, as adopted by the California Division of the State Architect (DSA).

B. California Green Building Standards Code (CAL Green), edition as noted on drawings, as adopted by the California Division of the State Architect (DSA).

C. Title 19, CCR, Article 33.01(i).

D. American National Standards Institute (ANSI):

1. A-117.1: Accessible and Usable Buildings and Facilities.

E. ASTM International (ASTM):

1. A53/A53M: Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
2. A153/A153M: Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Submittal Procedures:

1. Action Submittals and Informational Submittals shall be submitted in accordance with Section 01 3300, Submittal Procedures.
2. Closeout Submittals shall be submitted in accordance with Section 01 7700, Closeout Procedures.

3. Sustainable Design Submittals shall comply with the additional requirement of Section 01 8113, Sustainable Design Requirements.

B. Coordination:

1. Prior to production of shop drawings and samples, coordinate a pre-submittal conference with Architect to confirm submittal requirements, schedule, and sign review process.
2. For signs supported by or anchored to permanent construction, advise installers of anchorage devices about specific requirements for placement of anchorage devices and similar items to be used for attaching signs. Provide template for placement of sign-anchorage devices **[and electrical service]** embedded in permanent construction by other installers.

1.5 ACTION SUBMITTALS

A. Shop Drawings:

1. Scaled drawings and signage schedule for each sign indicating materials, lettering layout, and colors.
2. Font Style. 18 point graphical example of alphabet and numerical numbers 0 through 9 of signage font style, upper and lower case letters, punctuation, 18 point scale, and black text on white paper.

B. Product Data: Submit list and complete descriptive data of all products proposed for use. Include manufacturer's specifications, published warranty or guarantee, installation instructions, and maintenance instructions.

C. Samples:

1. Submit three samples of specified signage fonts to be used for visual and tactile characters including braille below the raised characters.
2. Color Verification: Provide physical sample of each available color form the manufacturer. Include color system name and serial number, code and name as applicable.
3. Control Samples. Samples shall be prepared on same base material to be used in fabrication. Submit one sample of each sign type. Signage types are indicated in Construction Document details. Interior signs shall be full size.
4. Dimensional Letters: One full-size representative samples of each dimensional letter type required, showing letter style, color, and material finish and method of attachment.
5. Symbol of Accessibility and Pictograms. Full scale sample of pictograms and symbol of accessibility to be used on sign panels and graphics.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For installer.

B. Sustainable Design:

1. General:
    a. Submit information necessary to establish and document compliance with the California Green Building Standards Code.
    b. Sustainable design submittals are in addition to other submittals.
2. The following information shall be provided:
    a. Adhesives and Sealants: Evidence of compliance that products meet maximum VOC content limits specified in Section 01 6116.

C. Sample of manufacturer's warranty.

D. Signage Schedule and Alphanumeric Nomenclature. As a component of shop drawings and informational submittals, verify with Architect the sign nomenclature; room names and numbers; wording of way-finding, directional and informational signage; text; and orientation of wayfinding pictorial graphics.

1.7 CLOSEOUT SUBMITTALS

A. Warranty/Guarantee: Submit executed warranty and Subcontractor's guarantee.

B. Maintenance data for signs and sign types including maintenance manuals.

1.8 QUALITY ASSURANCE

A. Contractor shall assure that the vendor shall be responsible for the quality of materials and workmanship of any firm acting as the vendor's subcontractor.

B. Use only new materials and products, unless existing materials or products are specifically shown otherwise on the Drawings to be salvaged and re-used.

C. Use materials and products of one manufacturer whenever possible.

D. Materials, components, assemblies, workmanship and installation are to be observed by the Owner's Project Inspector. Work not so inspected is subject to uncovering and replacement.

E. The adhesion of inlaid letters and symbols will be tested. See Article WARRANTY.

1.9 DELIVERY, STORAGE AND HANDLING

A. Deliver undamaged products to job in manufacturer's sealed containers and/or original bundles with tags and labels intact.

B. Store materials in protected, dry conditions off of ground and in areas so as to not interfere with the progress of the work.

C. Transport, store and handle in strict accord with the manufacturer's written recommendations.

1.10 FIELD MEASUREMENTS

A. Make and be responsible for all field dimensions necessary for proper fitting and completion of work. Report discrepancies to Architect before proceeding.

1.11 WARRANTY

A. Manufacturer: In addition to the Contractor's and Subcontractor's Guarantee, furnish Owner with manufacturer's available fully executed written warranty for signage against all defects in materials and workmanship, including without limitation against yellowing, cracking, crazing, and other visible and performance defects for a period of 5 years.

1. Text, pictograms or symbols that can be removed from the sign face utilizing a sharp object or other conventional methods will be considered a manufacturing defect.

PART 2 - PRODUCTS

2.1 DESIGN AND PERFORMANCE CRITERIA

A. Regulatory Standards:

1. Except as otherwise specified or shown, signage shall conform to the following:
   a. ANSI A-117.1 and the Americans with Disabilities Act (ADA).
   b. ATBCB Design Guidelines for Signage in relation to the Americans with Disabilities Act.
   c. California Code of Regulations, Titles 19 and 24.
      1) Contracted Grade 2 Braille shall be used whenever Braille symbols are specifically required. Refer to CBC Section 11B-703.3.
      2) All signage shall conform to CBC Section 11B-703.
   d. Uniform Sign Code.
2. When there is a conflict between the CBC and ADA, comply with the most stringent.

B. Design Criteria: Refer to Chapter 11B of the California Building Code.

1. Raised Characters: Section 11B-703.2.
   a. Depth: Section 11B-703.2.1.
   b. Case: Section 11B-703.2.2.
   c. Style: Section 11B-703.2.3.
   d. Character Proportions: Section 11B703.2.4.
   e. Character Height: Section 11B-703.2.5.
   f. Stroke Thickness: Section 11B-703.2.6.
   g. Character Spacing: Section 11B-703.2.7.
   h. Line Spacing: Section 11B-703.2.8.
   i. Installation Height and Location: Section 11B-703.4.

2. Braille: Section 11B-703.3.
    a. Contracted (Grade 2) Braille with rounded or domed dots shall be used wherever Braille is required.
        1) Braille dimensions in accordance with Table 11B-703.3.1.
3. Visual Characters: Section 11B-703.5.
    a. Character Proportions: Section 11B-703.5.4.
    b. Stroke Thickness: Section 11B-703.5.7.
    c. Character Spacing: Section 11B-703.5.8.
    d. Line Spacing: Section 11B-703.5.9.
4. Pictograms: Section 11B-703.6.
    a. Pictogram Field: 11B-703.6.1.
        1) Characters and Braille shall not be located in the pictogram field.
    b. Finish and Contrast: Section 11B-703.6.2.
        1) Pictograms and their field shall have a non-glare finish. Pictograms shall contrast with their field with either a light pictogram on a dark field or a dark pictogram on a light field.
    c. Text Descriptors: Section 11B-703.6.3.
        1) Locate text descriptors directly below the pictogram field.
        2) Text shall be raised characters with braille directly below.
5. International Symbol of Accessibility: Section 11B-703.7.2.1.
6. Toilet Room Door Symbols: Section 11B-703.7.2.6.
7. Tactile Exit Signs: Tactile exit signage to comply with1013.4 and 11B-703.4.

C. Sustainable Design:

1. VOC emissions for field-applied adhesives, sealants, and sealant primers must comply with limits specified in Section 01 6116.

2.2 PLASTIC SIGNS - TACTILE

A. Materials, Unless Otherwise Noted:

1. Manufacturer and Product: “Inlaid Tactile Sign” by Accent Signage Systems, Inc. Minneapolis, MN, 800-215-9437 as specified and the basis of design; Ellis & Ellis Sign Systems, Sacramento, CA, 916-924-1936; ASI-Modulex, Los Altos, CA, 650-940-1354; Weidner Architectural Signage, Sacramento, CA; or equal.
    a. Sign Face: Two 1/8-inch plies with eased edges; New Hermes “Gravo-Tac,” or equal.
        1) Total Thickness: 1/4 inch.
        2) Painted signs will not be accepted.
    b. Tactile Text: Provide tactile text and “Raster” Braille at plastic tactile signage.
        1) Tactile text shall be inlaid into sign face 1/32-inch and raised 1/32- inch minimum above sign face surface.

2) Inlaid text shall be 1-ply, 1/16-inch thick material; “Gravo-Tac” Exterior or equal.

3) Provide text and graphics precisely formed, uniformly opaque to comply with relevant ADA regulations and requirements indicated for size, style, spacing, content, position and colors.

4) Symbols where specified shall be International Style.

5) Braille shall be Contracted (Grade 2) Braille.

a) Dots shall be 0.10-inch on centers in each cell, 0.30-inch on center between corresponding dots in adjacent cells, and 0.395-inch minimum to 0.400-inch maximum on center between corresponding dots in cell directly below.

b) Dots shall be raised a minimum of 0.025-inch and a maximum of 0.037-inch above the background, and a base diameter of 0.059-inch minimum and 0.063- inch maximum.

c) Dots with straight sides and flat tops are not acceptable.

c. Colors: High contrast, non-glare, integral colors for graphics.

1) Integral materials shall be U.V. stabilized.

2) Characters, symbols and pictograms shall be in high contrast (light color) with background (dark) color and must conform to the CBC and the ADA Standards.

B. Fabrication:

1. Panel Appearance: Manufacturer's standard, high contrast, semi-matte colors.
2. Surface Texture: Matte Non-glare.
3. Character Style, Size and Layout Position:
   a. Characters shall be 1-inch high, unless otherwise indicated.
   b. The stroke of the uppercase letter “I” shall be 15 percent maximum of the height of the character.
   c. The width of the uppercase letter “O” shall be 60 percent minimum and 110 percent maximum of the height of the uppercase letter “I”.
   d. Character style to be Sans Serif, uppercase, accompanied by Braille directly below text at all locations where raised characters are required.
   e. Spacing between baselines of separate lines of raised characters with a message shall be 135 percent minimum and 170 percent maximum of the raised character height.
4. Text Schedule: Confirm text, symbols and numbering with the Architect and Owner.
5. Sign Size: As indicated on the Drawings or, if not shown, as reasonably required to accommodate text, symbols and Braille.
   a. Where signs are installed on window glazing, fabricate a blank sign back to match in size and shape to sign.
   b. Sign backs shall cover back side of sign from view through window on opposite side of sign.

c. Signs that are mounted back-to-back on glazing are to be matching in size; the smaller sign is to be increased in size as reasonably required to match the larger sign.

6. Sign Shape: As indicated on the Drawings.
   a. Corners: Radiused, unless otherwise shown.
7. Inlaid Letter Adhesion Process: Inlaid material shall be adhered into 1/32-inch deep routed sign face utilizing the heat and pressure bonded/chemically welded process as developed by Accent Signage Systems for the specified “Inlaid Tactile Sign.”
   a. Sign manufacturers for the specified “Inlaid Tactile Sign” shall be familiar with and utilize the exact same manufacturing process developed by Accent Signage Systems.
   b. Manufacturer must utilize the same and required equipment, products and techniques necessary to produce authentic “Inlaid Tactile Signs” as developed by Accent Signage Systems.
   c. Other adhesive products and methods, including applied adhesive tapes will not be accepted.

C. Sign Types: Provide braille translation directly below the raised characters.

1. Room Identification Sign: Provide as shown on the Drawings.
   a. Provide name and room number at each door indicated.
   b. Names and numbers to be reviewed and approved by Architect and Owner prior to fabrication.
   c. Allow an average of 4-numbers and 14-letters for each sign.
   d. Sign to be provided adjacent to doors as shown.
2. Toilet Room Identification Sign: In addition to the specified Door Symbol, provide a Toilet Room Identification Sign at the strike side of every toilet room door.
   a. Sign shall include an International Symbol of Accessibility, pictogram, and raised characters, specifying the room name with Braille translation below pictogram.

2.3 PLASTIC SIGNS - NON-TACTILE

A. Materials, Unless Otherwise Noted:

Manufacturer and Product: Acrylic panel sign as manufactured and distributed by Ellis & Ellis Sign Systems, 916-924-1936, as specified and the basis of design, or equal.

1. Sign Face: 1/4-inch, matt finish, non-glare acrylic with subsurface vinyl and paint. Painted faces will not be accepted.
2. Colors: Colors shall match specified Tactile Signs and as selected by Architect and Owner.
   a. Integral materials shall be U.V. stabilized.
   b. Graphics and text shall be in high contrast (light color) with background (dark) color.

B. Fabrication:

1. Sign Thickness: 1/4-inch.
2. Character Style, Size and Layout Position:
   a. Characters shall be a minimum of 1-inch high, unless otherwise indicated.
   b. The stroke thickness of the uppercase letter “I” shall be 10 percent minimum and 20 percent maximum of the height of the character.
   c. The width of the uppercase letter “O” shall be 60 percent minimum and 110 percent maximum of the height of the uppercase letter “I”.
   d. Letter style to be Sans Serif, uppercase.
   e. Space characters 10 percent minimum and 35 percent maximum of height of characters, measured between two closest points of adjacent characters, excluding word spaces.
   f. Spacing between baselines of separate lines of characters within a message shall be 135 percent minimum and 170 percent maximum of character height.
3. Text Schedule: Confirm text, symbols and numbering Architect and Owner using the shop drawing/submittal process.
4. Sign Size: As indicated on the Drawings or, if not shown, as reasonably required to accommodate text and symbols.
   a. Where signs are installed on window glazing, fabricate a blank sign back to match in size and shape to sign.
   b. Sign backs will cover back side of sign from view through window on opposite side of sign.
5. Sign Shape: As indicated on the Drawings or, as reasonably required to accommodate the specified text and size at lettering.
   a. Corners: 1/4-inch radius, unless otherwise shown.

C. Sign Types:

1. Toilet Room Door Symbol: Provide one of the following symbols as appropriate to the toilet room type. Toilet Room Door Symbols shall have a color contrast that is distinctly different from the color of the door. Characters, as shown, to be flush with face of symbol. The entire background color must contrast with door. A thin contrasting border around the symbol, with remainder of sign background in a non-contrasting color is not allowed.
   a. Girls: 12-inch diameter circle, with eased edges.
   b. Boys: Equilateral triangle with sides 12-inches long, with eased edges.
   c. Women: 12-inch diameter circle, with eased edges.
   d. Men: Equilateral triangle with sides 12-inches long, with eased edges.
   e. Unisex or Staff: equilateral triangle of contrasting color and super imposed on and geometrically inscribed within the face of 12-inch diameter circle, which is a contrasting color to the door. The vertices of the triangle symbol shall be located ¼-inch maximum from the edge of the circle with the vertex pointing upward. Both the circle and triangle to have eased edges.

2. Disabled Accessible Entrance Signs: 6-inches high x 6-inches wide with International Symbol of Accessibility.

2.4 METAL SIGNS

A. Letter Style:

1. The stroke thickness of the uppercase letter “I” shall be 10 percent minimum and 20 percent maximum of the height of the character.
2. The width of the uppercase letter “O” shall be 60 percent minimum and 110 percent maximum of the height of the uppercase letter “I”.
3. Letter style to be Sans Serif, uppercase.

B. Metal Reflectorized Signs:

1. Blue reflective vinyl background with white copy or symbol on 0.080 aluminum unless noted otherwise:
   a. Disabled Accessible Parking Stall:
      1) International Symbol of Accessibility with text below to read “MINIMUM FINE $250”.
      2) Pole mounted.
   b. Van Accessible Parking Stall:
      1) Same as Standard Accessible Parking Stall sign with text below to read "VAN ACCESSIBLE".
      2) Pole mounted.
2. Parking Lot Entrance: Text as shown on the Drawings, on dark blue background.
3. On-site Stop Sign: Red reflectorized vinyl background with white copy and border. Pole mounted; in compliance with State of California Business, Transportation and Housing Agency, Department of Transportation 1990 Uniform Sign Chart.
4. Directional Signs:
   a. Colors: As selected by Architect and Owner.
   b. Copy and locations as noted on Drawings.
   c. Pole mounted.
5. Traffic Control Signs (On-site and Off-site): Signs shall comply with State of California Business, Transportation and Housing Agency, Department of Transportation 1990 Uniform Sign Chart, California Sign Chart and local ordinances. Colors as selected by Architect.

C. Metal Painted Signs: Baked enamel on steel.

1. Gate Sign: 4-inch high lettering in all caps to read: “EXIT”.
   a. Provide at exit gate(s) as shown.
   b. Colors: As selected by Architect.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Prior to installation, carefully inspect and verify that the installed work of other trades is complete to the point where this installation may properly commence.

B. Verify that specified items may be installed in accordance with the approved design.

C. In the event of discrepancy, immediately notify Architect. Do not proceed in discrepant areas until discrepancies have been fully resolved.

3.2 INSTALLATION OF SIGNS

A. General: Locations of signs must be in accordance with the Drawings and approved shop drawings.

B. Plastic Signs:

1. General:
    a. Provide both mechanical fasteners and either adhesive or 2-sided adhesive tape as recommended by manufacturer for given mounting substrate.
    b. Fasteners: Minimum 4-recessed flush head tamper-proof (vandal-resistant) screws per sign.
2. Wood and Metal Framed Walls: Mechanical fasteners shall be of adequate length to penetrate exterior finishes and provide secure embedment into wall structure or sheathing.
3. Masonry Walls:
    a. At split-face concrete masonry (CMU) walls, Contractor shall be responsible for providing a “bushed-down,” level, rectilinear, and smooth, area, 1/2-inch larger than sign all around for flush sign mounting.
    b. Contractor shall not grind or prep CMU wall until signs are on site and exact sign size and location are verified and approved by Architect.
4. Glass:
    a. Utilize mounting adhesive and silicone where signs are mounted to glass.
    b. Provide vinyl window sign backer to match sign face size, mounted on opposite side of glass.
    c. Signs mounted back-to-back are to be matching in size.
    d. Do not pre-drill signs for mechanical fastening where sign is to be mounted to glass.

C. Pole Mounted:

1. General:
    a. Mount signs using galvanized steel carriage bolt with hex nut and washer.
    b. Touch up bolt head with paint to match background.
2. Accessible Parking Stall Sign:

a. Provide one sign at each stall.

3. Parking Lot Entry Sign and Stop Sign: Provide sign at location and height as indicated on the Drawings.
4. Pole: ASTM A53, Grade B, hot-dip galvanized in accordance with ASTM A153.
   a. Diameter and Height: As shown on the Drawings.
5. Foundations: Pole mounted signs shall be mounted in concrete footing as shown on the Drawings.

D. Other Signs: Use mounting method that is permanent, vandal resistant, and has been approved by the Architect.

3.3 PROTECTION

A. Protect work and materials of this Section and other Sections prior to and during installation, and protect the installed work and materials of all other trades.

B. In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

3.4 ADJUSTING AND CLEANING

A. Remove all dust, dirt, finger marks, etc. from signs and letters using cleaning methods as recommended by manufacturer.

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Floor-supported, overhead-braced, solid plastic toilet partitions.
2. Solid plastic urinal screens.

1.2 RELATED REQUIREMENTS

A. Section 01 6116, Volatile Organic Compound (VOC) Restrictions; for VOC limits pertaining to adhesives, sealants, fillers, primers, and coatings.

B. Section 01 8113, Sustainable Design Requirements, for CAL-Green general requirements and procedures.

C. Section 10 2800, Toilet Accessories.

1.3 REFERENCES AND STANDARDS

A. California Building Code (CBC), edition as noted on the Drawings, as adopted by the California Division of the State Architect (DSA).

B. California Green Building Standards Code (CAL Green), edition as noted on the Drawings, as adopted by the California Division of the State Architect (DSA).

C. National Fire Protection Agency (NFPA)

1. NFPA 286: Fire Test for Evaluation Contribution of Wall and Ceiling Interior Finish to Room Fire Growth.

D. ASTM International (ASTM):

1. A 167: Standard Specification for Stainless and Heat-Resisting Chromium. Nickel Steel Plate.
2. B 221: Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles and Tubes.
3. E 84: Test Method for Surface Burning Characteristics of Building Materials.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Submittal Procedures:

1. Action Submittals and Informational Submittals shall be submitted in accordance with Section 01 3300, Submittal Procedures.
2. Closeout Submittals shall be submitted in accordance with Section 01 7700, Closeout Procedures.

3. Sustainable Design Submittals shall comply with the additional requirement of Section 01 8113, Sustainable Design Requirements.

B. Scheduling and Coordination:

1. Floor anchor plates for partitions shall be secured to structural subfloor prior to installation of mortar setting bed for tile floor.
2. Coordinate with placement of support framing and anchors in walls.

1.5 ACTION SUBMITTALS

A. Shop Drawings: Submit plan, interior elevations and details showing components, connections and anchorages, adjacent materials, fully dimensioned and noted. Include blocking layout for use in structural framing.

B. Product Data: Submit list and manufacturer's complete descriptive data of products proposed for use. Include manufacturer's installation and maintenance instructions.

C. Samples:

1. 6-inch-square or larger sample of panel corner in selected color, showing core, edge treatment, and corner treatment.
2. Manufacturer's full range of colors for Architect's selection.
3. Hardware samples, if requested by Architect.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer and installer.

B. Certification: Submit certification showing independent testing that compartments comply with NFPA 286.

C. Evidence that plastic panels are Greenguard Certified

D. Sample of manufacturer's warranty.

1.7 CLOSEOUT SUBMITTALS

A. Warranty/Guarantee: Submit executed warranty and Subcontractor's guarantee.

1.8 QUALITY ASSURANCE

A. Qualifications:

1. Manufacturer: Minimum 5 years' experience in manufacturing of solid plastic (HDPE) toilet compartments with products in satisfactory use under similar service conditions.
2. Installer: Minimum 5 years' experience in work of this Section.

B. Use only new materials and products, unless existing materials or products are specifically shown otherwise on the Drawings to be salvaged and re-used.

C. Single-Source Responsibility: Use materials and products of one manufacturer whenever possible.

D. All materials, components, assemblies, workmanship and installation are to be observed by the Owner's Project Inspector. Work not so inspected is subject to uncovering and replacement.

E. Mockups:

1. First installed example of each type of toilet compartment and urinal screen shall serve as a mockup for review and approval by Architect of workmanship, visual effect, accessibility, and interface with adjacent construction.
2. Toilet compartment shall be complete with hardware and with toilet accessories specified in Section 10 2813, Toilet Accessories.

1.9 DELIVERY, STORAGE AND HANDLING

A. Deliver undamaged products to job in manufacturer's sealed containers and/or original bundles with tags and labels intact.

B. Store materials in protected, dry conditions off of ground and in areas so as to not interfere with the progress of the work.

C. Transport, store and handle in strict accord with the manufacturer's written recommendations to avoid deformation.

1.10 FIELD MEASUREMENTS

A. Make and be responsible for all field dimensions necessary for proper fitting and completion of work. Report discrepancies to Architect before proceeding.

1.11 WARRANTY

A. Manufacturer: In addition to the Contractor’s and Subcontractor’s Guarantee, furnish Owner with manufacturer’s fully executed written warranty for plastic toilet partition system against defects in materials and workmanship including breakage, warpage, corrosion or delamination of installed plastic components, door latch and strike, integral hinge system and stainless steel shoes and wall brackets for a period of 25 years.

1. Defective components shall be replaced.
2. Labor for reinstallation shall be included.

PART 2 - PRODUCTS

2.1 DESIGN AND PERFORMANCE CRITERIA

A. Comply with accessibility requirements of CBC Section 11B-604, “Water closets and toilet compartments,” and ADA “Standards for Accessible Design.” Comply with the most stringent where there is a conflict.

B. Brace partitions to structure to meet seismic provisions of the CBC.

C. Fire Resistance when Tested in accordance with ASTM E 84:

1. Smoke Developed Index: Not to exceed 450.
2. Flame Spread Index: Not to exceed 25.
3. Material Fire Ratings:
   a. Test Method: NFPA 286.
   b. Rating: International Code Council (ICC) Class A.

D. Sustainable Design:

1. Plastic panels shall be Greenguard Certified.

2.2 TOILET COMPARTMENTS

A. Manufacturer and System: "Hiny Hiders" by Scranton Products, or equal:

2.3 MOUNTING CONFIGURATIONS

A. Toilet Enclosures: Floor-supported, overhead-braced.

B. Urinal-Screen Style: Post-to-ceiling supported flat panel.

2.4 MATERIALS AND COMPONENTS

A. Doors, Panels and Pilasters:

1. Material: High density polyethylene (HDPE), fabricated from polymer resins compounded under high pressure, forming single thickness panel.
   a. Surface Characteristics: HDPE shall be waterproof and nonabsorbent, with self-lubricating surface, resistant to marks by pens, pencils, markers, and other writing instruments.
2. Minimum Finished Thickness:
   a. Panels and Urinal Screens: 1 inch straight cut with fine radius edge.
   b. Stiles: 1 inch straight cut with fine radius edge.
   c. Doors: 1 inch straight cut with fine radius edge.
3. Door Width:
   a. Typical: 24 inch minimum.
   b. Accessible Stalls: Sized to provide minimum 36 inch clear opening.
4. Door and Panel Height: 55 inches mounted 14 inches above finish floor.
5. Urinal Screens:
   a. Height: 42 inches mounted 14 inches above floor.
   b. Depth: 18 inches.

B. Leveling Device: 7-gauge (0.0874 inch) hot rolled steel bar; chromate-treated and zinc-plated; through-bolted to base of solid color reinforced composite stile.

C. Stile Shoes: Type-304, 20-gauge (0.036 inch) stainless steel with satin finish.

1. Top shall have 90 degree return to stile.
2. Shoe shall be one-piece and capable of being securing fastened to stiles.

D. Headrails: 1-inch x 1-5/8-inch minimum, heavy-duty tubular stainless steel or extruded anodized aluminum, satin finish, anti-grip profile.

E. Floor to Ceiling Posts: 1-1/4 inch square x 18 gauge stainless steel with satin finish, full height, where indicated.

F. Other Components: Non-corroding metal.

2.5 HARDWARE AND FITTINGS

A. General:

1. Hardware shall be ADA and accessibility compliant.
2. All hardware to be 18-8, type-304 stainless steel with satin finish.
3. Hardware of chrome-plated “Zamak”, aluminum, or plastic is unacceptable except as otherwise specified.
4. All hardware to be Vandal-Resistant, Institutional Grade.
5. Each through-bolted fasteners and threaded bass insert shall withstand direct pull force exceeding 1,500 pounds.
6. Emergency Access: Hinges and door latch shall allow door to be lifted over keeper from outside compartment on inswing doors.

B. Mounting Brackets:

1. Panels: 18-gauge (0.048 inches) stainless steel, full height of panel.
   a. U-channels shall be furnished to secure panels to stiles.
   b. Angle brackets shall be furnished to secure stiles to walls and panels to walls.
   c. Fasteners at locations connecting panels-to-stiles shall utilize through bolted, stainless steel, pin-in-head Torx sex bolt fasteners.
2. Urinal Screen: 11 gauge (0.120 inches) stainless steel, full height of panel.

C. Hinges and Stops:

1. Hinges: Self-closing, 16-gauge (0.060 inch) continuous piano hinge.
   a. Continuous piano hinge, self-closing gravity type, shall be attached to door and stile by theft-resistant, pin-in-head Torx stainless steel machine screws into factory-installed, threaded brass inserts. Fasteners secured directly into the core are not acceptable.
2. Stops: Two 11-gauge (0.120 inch) stainless steel door stop plates with attached rubber bumpers to resist door from being kicked in/out beyond stile.
3. Door stops and hinges shall be secured with stainless steel, pin-in-head Torx machine screws into threaded brass inserts.

D. Latch, Strike, and Keeper:

1. Stainless steel door latch shall slide into a stainless steel keeper.
    a. Sliding door latch shall require less than 5-pound force to operate. Twisting latch operation is not acceptable.
    b. Latch track shall be attached to door by machine screws into factory-installed threaded brass inserts.
2. Through bolted, stainless steel, pin-in-head Torx sex bolt fasteners shall be used at attach keeper-to-stile.
3. Mount latch at 42-inches above the finished floor in accessible stalls.
4. Track of door latch shall prevent inswing doors from swinging out beyond stile.
5. On outswing doors, door keeper shall prevents door from swinging in beyond stile.
6. Bumper: Extruded black vinyl.

E. Locking: Door locked from inside by sliding door latch into keeper.

F. Coat Hook and Bumper:

1. Combination type.
2. Equip outswing doors at accessible compartments with second door pull and door stop.
3. Mount hook at 48-inches above the finished floor in center of door on the inside of the stall.

G. Door Pulls:

1. Provide door pull and wall stop for outswinging doors.
2. Equip doors to accessible stall with both inside and outside pulls.
3. Pulls shall be "U" shaped.

H. Fasteners: As recommended by partition manufacturer and the following:

1. Use stainless steel hardware to attach panel-to-stile brackets, coat hooks, and latch keepers.
2. Exposed Bolts and Screws: Theft-resistant, one-way heads, stainless steel, ASTM A167; Type 304, pinhead Torx screws.

2.6 COLORS AND FINISHES

A. Color of HDPE: As selected by the Architect from the manufacturer’s available standard colors for fire-rated HDPE. Doors, pilasters and panels may be of different colors.

B. Stainless Steel: No. 4 satin finish.

C. Aluminum: Clear Anodized.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Prior to installation, carefully inspect and verify that the installed work of other trades is complete to the point where this installation may properly commence.

B. Verify that toilet partitions may be installed in complete accordance with the original design. Verify solid blocking has been provided in walls and ceilings at all partition and bracing connection locations. Do not install if blocking is missing.

C. In the event of discrepancy, immediately notify the Architect. Do not proceed in discrepant areas until discrepancies have been fully resolved.

3.2 INSTALLATION

A. General:

1. Install all toilet partitions and screens where indicated on the Drawings and reviewed shop drawings, anchoring into solid blocking in compliance with manufacturer's installation instructions.
2. Install partitions and screens rigid, straight, plumb and level.

B. Provide clearances of not more than 3/8 inch between pilasters and panels, and not more than 1/2 inch between panels and walls and not more than 3/8 inch between vertical edge of doors and pilasters.

C. Secure panels to walls with full length, continuous wall brackets using stainless steel fasteners spaced maximum 12 inches on-center.

D. Stile shoes shall be anchored to floor with 1-1/2 inch, #14 stainless steel screws and metal anchors. Secure pilaster within shoe with theft resistant sex bolt.

E. Attach panels and pilasters to continuous brackets with theft resistant sex bolts.

F. Secure overhead brace to face sheets with not less than 2 fasteners per face.

G. Set tops of doors to be parallel with top of pilasters and overhead brace when doors are in closed position.

H. Urinal Screens: Provide floor to ceiling post and wall brackets.

3.3 ERECTION TOLERANCES

A. Maximum Variation From True Position: 1/4 inch.

B. Maximum Variation From Plumb: 1/8 inch.

3.4 ADJUSTING

A. Make final adjustments to leveling devices.

B. Adjust and lubricate hardware for proper operation after installation.

1. Set hinges on in-swing doors to hold doors open approximately 30 degrees from closed position when unlatched.
2. Set hinges on out-swing doors to return to fully closed position.

C. Replace damaged parts, surfaces which are not free from imperfections. Field touch-up of scratches or damaged finish will not be permitted. Replace damaged or scratched materials with new materials.

3.5 CLEANING

A. Upon completion, and as a condition of acceptance, visually inspect the entire work of this Section. Surfaces shall be free of imperfections, scratch marks, blemishes or color variations.

B. Upon completion, thoroughly wash surfaces, remove foreign material, and polish surfaces.

C. Leave entire work in neat, orderly, clean, acceptable condition as approved.

3.6 PROTECTION

A. Protect work and materials of this Section prior to and during installation, and protect the installed work and materials of other trades.

B. In the event of damage, make all repairs and replacements necessary to the approval of the Architect at no additional cost to the Owner.

C. Adequately protect products during and after installation against damage of every nature. Exposed finishes shall be free from scratches, dents, permanent discolorations and other defects in workmanship or materials.

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Toilet accessories.

1.2 RELATED REQUIREMENTS

A. Section 05 4000, Cold-Formed Metal Framing, for blocking and backing.

B. Section 06 1000, Rough Carpentry, for blocking and backing.

C. Section 09 3000, Tiling.

D. Section 10 2113, Plastic Toilet Compartments.

E. Division 26, Electrical.

1.3 REFERENCES AND STANDARDS

A. California Building Code (CBC), edition as noted on the Drawings, as adopted by the California Division of the state Architect (DSA).

B. California Green Building Standards Code (CAL Green), edition as noted on the Drawings, as adopted by the California Division of the State Architect (DSA).

1.4 ADMINISTRATIVE REQUIREMENTS

A. Submittal Procedures:

1. Action Submittals and Informational Submittals shall be submitted in accordance with Section 01 3300, Submittal Procedures.
2. Closeout Submittals shall be submitted in accordance with Section 01 7700, Closeout Procedures.

B. Coordination: Coordinate with other trades as required to ensure proper and adequate provision in framing and wall finish for the installation of the selected toilet accessories in the locations required including recessed items)

1.5 ACTION SUBMITTALS

A. Shop Drawings: Submit showing parts, connections and anchorages, adjacent materials, fully dimensioned and noted.

B. Product Data: Submit list of each required accessory and complete descriptive data of products proposed for use. Include manufacturer's specifications, published warranty, installation instructions, and maintenance instructions.

1.6 INFORMATIONAL SUBMITTALS

A. Sample of manufacturer’s warranty.

1.7 CLOSEOUT SUBMITTALS

A. Warranty/Guarantee: Submit executed warranty and Subcontractor’s guarantee.

B. Keys for lockable accessories.

C. Maintenance data and operating instructions.

1.8 QUALITY ASSURANCE

A. Use only new materials and products, unless existing materials or products are specifically shown otherwise on the Drawings to be salvaged and re-used.

B. Use materials and products of one manufacturer whenever possible.

C. All materials, components, assemblies, workmanship and installation are to be observed by the Owner's Project Inspector. Work not so inspected is subject to uncovering and replacement.

1.9 DELIVERY, STORAGE AND HANDLING

A. Deliver undamaged products to job in manufacturer's sealed containers and/or original bundles with tags and labels intact.

B. Store materials in protected, dry conditions off of ground and in areas so as to not interfere with the progress of the Work.

C. Transport, store and handle in strict accord with the manufacturer's written recommendations.

1.10 FIELD CONDITIONS

A. Make and be responsible for field dimensions necessary for proper fitting and completion of Work. Report discrepancies to Architect before proceeding.

B. Verify wall depths are adequate for each item prior to ordering. Notify Architect of conflicts or discrepancies.

1.11 WARRANTY

A. Manufacturer: In addition to the Contractor’s and Subcontractor’s Guarantee, furnish Owner with manufacturer's fully executed written warranty for toilet accessories against defects in materials and workmanship, agreeing to replace and install toilet accessories at no additional cost to the Owner, within warranty period as follows:

1. Hand and Hair Dryer:
    a. Motor Brushes: For a period of 3 years.
    b. All Other Parts: For a period of10 years.

2. Glass Mirrors: For a period of10 years.
3. All Other Accessories: For a period of 3 years.

PART 2 - PRODUCTS

2.1 OWNER FURNISHED CONTRACTOR INSTALLED PRODUCTS

A. The following products will be furnished by the Owner for installation by Contractor. Provide adequate blocking for attachment. Miscellaneous items are to be provided and installed by Contractor.

1. Soap Dispensers
2. Paper Towel Dispensers.
3. Toilet Tissue Dispensers (non-accessible locations only).

2.2 DESIGN AND PERFORMANCE CRITERIA

A. Conform to applicable requirements of ADA and CBC for accessibility. When in conflict, conform to the most stringent.

2.3 MANUFACTURERS

A. Accessories: Bobrick Washroom Equipment Inc. or Bradley Corporation as specified and the basis of design, unless otherwise noted, or equal.

1. Manufactured accessories not specified shall require approval as a substitution to be considered equal. Refer to substitution requirements specified in Section 01 3300, Submittal Procedures.
2. Although multiple manufacturers may be specified for a specific accessory, all accessories shall be the product of a single manufacturer, unless otherwise specified or approved.

2.4 MANUFACTURED UNITS

A. General:

1. Locked Dispensing Units: Key alike for all accessories.

B. Grab Bars: 18 gauge 1-1/2 inch outside diameter, type 304 stainless steel welded to 1/8 inch type 304 solid stainless steel wall plates; Bobrick Series B-6806, Bradley 812 Series, or equal.

1. Configurations and Lengths: As shown.
2. Grab bar shall withstand a 250 pound point load.
3. Joints ground and polished.
4. Finish on Exposed Surfaces: Satin.
5. Fastening: Concealed, vandal resistant.

C. Mirror, Glass: 1/4 inch thick No. 1 (mirror glazing) quality, clear polished float glass, with protective copper backing over silver coating and non-metallic elastic paint; Bobrick Series B-165, Bradley 781 Series, or equal.

1. Edges shall be protected by friction-absorbing filler strips.
2. Size, Unless Otherwise Shown:
   a. Kindergarten and Elementary Toilet Rooms: 18 inches wide x 30 inches high.
   b. Middle School/Junior High, High School, College and Staff Toilet Rooms: 18 inches wide x 36 inches high.
3. Safety Backing: Full size, shock absorbing, water-resistant, non-abrasive, 3/16 inch thick polyethylene padding.
4. Backs: Galvanized steel backing with formed edges, integral horizontal hanging brackets. Provide with theft-resistant concealed hangers.
5. Frames: Stainless steel, 1/2 inch x 1/2 inch x 3/8 inch channel with bright polish finish.
   a. Use theft-resistant screws in countersunk holes where screws are exposed.
   b. Corners: Square and mitered, weld or mechanically fastened to tight hairline joint, or frame as one piece with rounded corners.

D. Mirror, Stainless Steel: Vandal-resistant stainless steel, frameless mirror; type 430, minimum 20 gauge stainless steel with bright polished finish, and 1/4 inch return; Bobrick Model B-942, or Bradley Model SA05.

1. Mounting: Tamper-resistant screws.

E. Recessed Toilet Paper Dispenser at Disabled Accessible Locations: Multi-roll; Bobrick B-3888.

F. Recessed Toilet Paper Dispenser at Disabled Accessible Locations - Kindergarten/Elementary: Dual-roll, with anti-theft spindle; Bobrick B-6977, Bradley 5124-52.

G. Surface Mounted Toilet Paper Dispenser: 22 gauge, type-304 stainless steel, satin finish with vandal resistant tumbler lock; Bobrick B-272, Bradley 515.

H. Surface-Mounted Toilet Seat Cover Dispenser: Bobrick “Contura Series” B-4221, Bradley 5A40-11.

I. Liquid Soap Dispenser: Owner furnished, contractor installed.

J. Paper Towel Dispenser: Owner furnished, contractor installed.

K. Sanitary Napkin/Tampon Dispenser: Coin free operation. Provide semi-recessed unit except where obstruction precludes recessing.

1. Semi-Recessed: Bobrick B-370634C.
2. Surface-Mounted: Bobrick B-2706C.

L. Sanitary Napkin Disposal:

1. Partition Mounted for Two Toilet Compartments: Bobrick B-354, Bradley 4721-15.
2. Surface Mounted for Single Compartment: Bobrick B-270, Bradley 4781-11.

2.5 FASTENINGS

A. Toilet accessories shall be complete with required fastenings.

B. Fastenings shall either harmonize with the item being fastened, or be of the concealed type.

C. Exposed fastenings shall be theft and vandal-resistant.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Prior to installation of the Work of this Section, carefully inspect and verify that the installed Work of other trades is complete to the point where this installation may properly commence.

B. Verify that specified items may be installed in accordance with the approved design.

C. In the event of discrepancy, immediately notify the Architect. Do not proceed in discrepant areas until discrepancies have been fully resolved.

3.2 PREPARATION

A. The Contractor shall provide recesses, anchorage and back-up blocking in sizes and in locations as required for proper installation of accessories. Coordinate with other trades where necessary to make provisions for installation.

B. Securely anchor items in place in locations and at mounting heights indicated. Where specific dimensions are not noted, installation shall be approved by the Architect.

C. Securely fasten grab bar mounting plates to solid framing or blocking, in accordance with CBC.

D. Provide cut-outs in toilet partitions for napkin disposal units as required.

3.3 INSTALLATION

A. Install fixtures, accessories and items in accordance with manufacturers' printed instructions where shown or as approved by Architect.

B. Mount surface-mounted accessories to solid backing or blocking.

C. Install plumb and level, securely and rigidly anchored to substrate.

D. Use concealed vandal-resistant fastenings wherever possible.

1. Adhesive installation not permitted.
2. Provide anchors, bolts and other necessary fasteners, and attach accessories securely to walls or toilet partitions as recommended by manufacturer for each item and each type of substrate condition.

E. Grab bars: Solidly anchor grab bars to withstand minimum downward pull of 500 pounds between any 2 supports after installation.

F. Verify type, location and attachment methods of items furnished by Owner to ensure proper preparation of substrate for solid attachment of accessories.

G. Sealants: Comply with requirements of Section 07 9200, Joint Sealants.

1. Apply behind toilet accessories as necessary to ensure sanitary and watertight integrity of surfaces.
2. Conceal sealants.

3.4 CLEANING AND ADJUSTING

A. Upon completion of installation, remove manufacturer's temporary labels, marks of identification.

B. Thoroughly wash surfaces, remove foreign materials, polish surfaces.

C. Leave entire accessories in neat, orderly, clean, acceptable condition as approved.

D. Replace damaged parts, surfaces which are not free from imperfections.

3.5 PROTECTION

A. Protect Work and materials of this Section prior to and during installation, and protect the installed Work and materials of other trades.

B. In the event of damage, make repairs and replacements necessary to the approval of the Architect at no additional cost to the Owner.

C. Exposed finish shall be free from scratches, dents, permanent discolorations and other defects in workmanship or material.

END OF SECTION

PART 1 - GENERAL

1.1 SCOPE OF SERVICES

A. DESCRIPTION: Work to be done under this Section shall include all labor, materials, equipment, calculations, drawings, services, supervision and transportation necessary to design, furnish, deliver, and install pre-engineered shade structures as shown on the drawings and specified herein, complete including foundations and ready for use by Owner.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Pertinent Sections specifying Volatile Organic Compound (VOC) Content Restrictions.

B. Section 31 0000, Earthwork.

C. Section 32 1600, Site Concrete

1.3 PRODUCT QUALIFICATION - DSA PC REQUIRED

A. Each bidder shall submit with is duly executed Bid Form a set of Manufacturer's structural and architectural plans and structural calculations for this design bearing a PC previously approved by DSA under the 2022 CBC. Specifications from said previous job are not required. This set shall bear a stamp of approval by DSA. This set shall be provided for determining bidder's ability to perform within the time limits of this specific project, and shall show the PC number.

B. Failure to submit DSA-approved PC plans with the bid shall constitute an incomplete submission of bid and be as basis for rejection of bid.

C. The plans submitted must show capability of manufacturer to produce a product meeting all conditions shown on the drawings and specified herein.

D. The manufacturer cited must have the legal rights to construct the representative design. Under no conditions will these submitted plans be considered to be design drawings called for under item 1.03 below, nor will the said plan submission be considered for the purpose of any substitution of the total requirements of the bid documents.

1.4 APPROVAL PROCESS

A. Phase I:

1. Signing of Contract
2. Contractor's preparation of shade structure design drawings and calculations, and coordination of same with bid documents including architectural, mechanical and electrical plans and specifications. Drawings and calculations to be based on manufacturer's previously approved PC.

3. Presentation of the above Contractor documents for Architect's review and comment. Submit electronic copy of drawings and calculations.
4. Revisions of Contractor's drawings and calculations, if required by Architect to conform with bid documents.
5. Delivery to Architect of Contractor's original drawings, four copies of drawings and two copies of calculations.
6. Architect files all designs with DSA, application fee paid by Owner.
7. Processing of Contractor's submittals and shop drawings, ordering of materials (no physical construction on-site or in-factory can begin until Phase III).

B. Phase II:

1. DSA (Structural Safety Unit, Access Compliance Unit and Fire & Life Safety Unit) plan checking, returning same to Architect.
2. Contractor corrects drawings and Architect revises specifications pursuant to DSA comments; Architect arranges for backcheck with DSA.
3. DSA backcheck with subsequent approval of drawings and specifications.
4. Contractor and Architect continue processing of submittals and shop drawings, through Phase III.

C. Phase III:

1. Factory and on-site construction of the buildings and associated sitework.

D. Work Schedule: Work of this project will proceed on the following schedule. (The number of calendar days shown on Bid Form for project completion <u>includes</u> DSA Plan Checking).

1. Preparation of Contractor's Structural Plans and Calculations and Delivery to Architect - Previously approved PC is required - To be received 2 days after receipt of Notice of Intent to Award.
2. Architect and Structural Engineering Checking of Contractor's Plans and Return to Contractor - 7 days.
3. Revisions of Plans by Contractor (if necessary) and Final Review by Architect - 7 days.
4. DSA Plans Checking - 20 days.
5. Plans Revision by Contractor to Reflect DSA Comments - 7 calendar days.
6. Backcheck at DSA after Return of Checkset - 7 calendar days.
7. In-plant and On-site Construction - Balance of calendar days specified in Bid Form. (Phase III)

1.5 SUBMITTALS

A. Refer to Section 01 3300.

B. Manufacturer's Data: Submit list and complete descriptive data of all products proposed for use. Include manufacturer's specifications, published warranty or guarantee, installation instructions, and maintenance instructions.

C. CAL-GREEN Submittals:

1. Product Data – VOC Limits: For adhesives, sealants, fillers and primers, documentation including printed statement of VOC contents, comply with limits specified in Section 01 6116.

1.6 REFERENCES AND STANDARDS

A. California Building Code (CBC), edition as noted on the drawings, as adopted by the California Division of the State Architect (DSA).

B. California Green Building Standards Code, edition as noted on the drawings, as adopted by the California Division of the State Architect (DSA).

1.7 PRODUCT HANDLING

A. GENERAL: All work shall be fabricated and delivered to site in ample time so as not to delay construction progress.

B. DELIVERY: Protect products during shipping; dents or other defects not acceptable.

C. STORAGE: Store products so as to protect them from damage.

1.8 GUARANTEE

A. Refer to General Conditions and Section 01 3300.

B. Submit fully executed guarantee covering all materials and workmanship under this section.

1.9 OBSERVATION, INSPECTION AND TESTING (SEE ALSO SECTION 01 4523)

A. Inspection and Testing requirements shall be in accord with Title 24, DSA, and as further described below.

B. Plant inspection of manufacturing of pre-engineered shade structures as required shall be specified in complete documents to be submitted to Owner's Architect for review before filing with DSA (T & I List). Material testing is not required for steel stressed to less than 15,000 psi; for steel stressed over 15,000 psi comply with Title 24, Section 2212A.1.

C. All costs of Inspection and Testing of work done in manufacturer's plant and of materials and assemblies delivered to site shall be paid for by Owner (not included in this contract). Order for such inspection will be issued by Owner. (See Section 01 4523.)

D. All work done at school site and plant shall be subject to inspection by Inspector of Owner as required under Chapter 4 of Part 1 of Title 24. All on-site inspection costs will be paid for by Owner, including special inspection required by Title 24.

1.10 LAYOUT AND USE OF PROPERTY

A. Specific areas will be designated for this work, for storage of materials on site, for traffic lanes to and from building site. Contractor's activities shall be limited to these areas.

B. Work shall proceed in such manner as to not interfere with Owner's activities in and about existing facilities. Exceptions will be made only after previous agreement between Owner, Architect and Contractor.

1.11 PROTECTION

A. Protect existing installations from damage. Take measures to prevent damage to existing turf, trees, paving, streets, curbs, walks, lawn sprinkler heads, and existing buildings during construction. Restore and repair any damage caused by work under this Contract to existing facilities without expense to Owner.

1.12 EXISTING UTILITIES

A. Location of existing underground utilities shown on drawings are approximate only. Realigning of existing active underground lines that are to remain in use, which are uncovered by work of this Contract and which cannot be determined by Contractor in estimating work, shall be done at expense of Owner. Price shall be agreed upon before doing this work, per change order requirements of the General Conditions.

B. Contractor shall positively locate any overhead utilities which may have lines crossing or blocking his path in any way and shall arrange and pay for all permits or licenses for crossing city or county lines and for travel over all roads and highways.

1.13 GRADING AND DRAINAGE

A. Any grades disturbed by Contractor shall be graded at no additional cost to Owner to assure proper drainage away from structure and paved walks and drives and so as not to disturb existing drainage patterns.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. VOC Limits for adhesives, sealants, fillers, coatings and primers. Comply with limits specified in related Section.

B. Provide products conforming to local, State and Federal government requirements limiting the amount of volatile organic compounds contained in the product, for its intended application. If specified product exceeds current requirement, provide conforming product at no additional cost. Provide written confirmation to Architect

describing reason for revision and demonstrate compliance of replacement product with specified requirements.

2.1 DESIGN REQUIREMENTS

A. Columns: Structure shall be open on all sides with steel columns as shown on contract drawings to provide vertical and lateral load support.

B. Roofs: Design live load of 20 psf (no area reduction). All roofs shall be designed to resist applied horizontal and vertical loads including wind uplift.

C. Foundations: Pre-engineered structure design shall include the proper design of concrete foundations fully conforming to **2022** CBC, as adopted by DSA. Total load vertical pressure shall not be in excess of 2000 psf. Resistance to lateral loads shall not exceed 200 psf lateral bearing per foot of depth below the top 24" of soil. All foundations shall have a minimum penetration into lowest adjacent grade of five feet. All concrete foundations shall be in accordance with Sections 31 2000, 03 1000, 03 2000, 03 3000.

D. Lateral Loads: Wind design shall be for 85 m.p.h. minimum basic wind speed with Exposure C terrain. Seismic design shall be per **2022** CBC.

E. Owner's Architect will select all colors for materials inside and outside of the structure. Submit samples of all materials immediately after award of the Contract to assure adequate time for color selection.

F. Submittals for all phases of the work shall be in accordance with Section 01 3300 and individual specification section requiring submittals.

G. Wherever stacks of material, erection equipment or other loads are carried by work during construction, make provisions to take care of stresses and strains resulting. Keep temporary bracing in place until permanent walls and roofs are completed; provide temporary bracing sufficient to keep structure stable, plumb and in line until completed. Place temporary bracing to allow freedom of workmen in building and erecting other work.

2.2 MATERIALS

A. Pre-engineered shade structure shall be as shown and specified in contract documents. Provide free standing steel structure as shown on Poligon PC No. 02-116824 by W.H. Porter Inc., or accepted equal. Any approved equal outside of the drawings within this package must undergo DSA review as a construction change.

B. MATERIALS:

1. Structural shapes & plates - ASTM A-36 Typical
2. HSS shapes (tube columns) - ASTM A-500 Grade B
3. Bolts:
    a. Machine Bolts - ASTM A-307; Nuts ASTM A-563 Hex, Grade A

b. High Strength - Bolts ASTM A-325; Nuts - ASTM A-563 Heavy Hex, Grade CL

4. Non-shrink grout - ASTM C-1107; 7,000 psi (non-metallic).
5. Roofing to be Kynar coated standing seam roof over 30 pound felt over roof deck.

2.3 FABRICATION

A. Workmanship, fabrication, and connections shall be in accordance with AISC specifications.

B. WELDING: Electrodes - Class E-70 XX series, low hydrogen, AWS D1.1; Welders - certified by DSA; Groove & Butt Welds - Complete penetration (CP) UON; Fillet Welds - sizes specified are minimum structural welds. Increase as required by ASD table J2.4; Field Welding - may be required to facilitate construction; Termination - welds terminating at ends or sides, wherever practicable shall be returned continuously around corners a distance 2 times the nominal size of the weld per ASD section J2.2B.

C. SHOP DRAWINGS: Reviewed by the engineer before fabrication.

D. BOLT HOLES: Typical - diameter + 1/16 inch; Anchor - diameter + 3/16 inch.

E. EXPOSED STEEL: Hot dip galvanized or primer painted if finish painting to be applied.

F. SPLICES: None accepted.

PART 3 - CLEANING

3.1 EXAMINATION OF CONDITIONS

A. CONDITIONS OF WORK IN PLACE: Subsurfaces which are to receive materials specified under this Section shall be carefully examined before beginning work hereunder, and any defects therein shall be reported, in writing, to the Architect. Work shall not be started until such defects have been corrected. Starting of work shall imply acceptance of conditions as they exist.

B. JOB MEASUREMENTS: Take field measurements for this work and be responsible for same. Report any major discrepancy between plan and field dimensions to the Architect.

3.2 INSTALLATION

A. GENERAL: Installation shall be in strict conformance with AISC standards, the manufacturer’s written directions, as shown on approved drawings and as herein specified.

3.3 CLEANING

A. GENERAL: Premises shall be kept free from accumulation of waste and rubbish. At completion of work and as necessary during progress of work, remove from premises all surplus materials, rubbish, and debris.

B. FINAL PREPARATION: Prepare all surfaces so as to eliminate burrs, sharp projections, splinters, etc.

- END OF SECTION -

PART 1 - GENERAL

1.1 INCLUSION OF OTHER CONTRACT DOCUMENTS

A. The General Conditions, Supplementary Conditions and Division 1 are fully applicable to this Section, as if repeated herein.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01 5000, Temporary Facilities and Controls.

B. Section 32 1600, Site Concrete.

1.3 QUALITY ASSURANCE

A. Use only new materials and products, unless existing materials or products are specifically shown otherwise on the Drawings to be salvaged and re-used.

B. All materials, components, assemblies, workmanship and installation are to be observed by the Owner's Inspector of Record. Work not so inspected is subject to uncovering and replacement.

C. The representatives of the Owner's testing lab will not act as supervisor of construction, nor will they direct construction operations. Neither the presence of the Owner's testing lab representatives nor the testing by the Owner's testing lab shall excuse the contractors or subcontractors for defects discovered in their work during or following completion of the project. Correcting of inadequate compaction or moisture content is the sole responsibility of the contractor.

D. Tests (See Part 3 for Compaction Testing).

E. Contractor shall be solely responsible for all subgrades built. Failures resulting from inadequate compaction or moisture content are the responsibility of the contractor. Contractor shall be solely responsible for any and all repairs.

1.4 SUBMITTALS

A. Refer to Section 01 3300.

B. Manufacturer's Data: Submit list and complete descriptive data of all products proposed for use. Include manufacturer's specifications, published warranty or guarantee, installation instructions, and maintenance instructions.

1.5 GUARANTEE

A. Refer to General Conditions and Section 01 3300.

1.6 REFERENCES AND STANDARDS

A. California Building Code (CBC), latest edition, as adopted by the California Division of State Architect (DSA).

B. California Green Building Standards Code, latest edition, as adopted by the California Division of the State Architect (DSA).

C. General: Site survey, as included in the drawings, was prepared by Warren Green Engineering dated 2023 and is the basis for data regarding current conditions. While the survey is deemed generally accurate, there exists discrepancies and variations due to elapsed time, weather, etc. Existing dirt grades may vary 0.2 ft. from that shown.

D. Site Visitation: All bidders interfacing with existing conditions shall visit the site prior to bid to verify general conditions of improvements. Discrepancies must be reported prior to the bid for clarification.

E. ANSI/ASTM D698-00 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5 lb (2.49 Kg) Rammer and 12 inch (304.8 mm) Drop.

F. ANSI/ASTM D1556-00 - Test Method for Density of Soil in Place by the Sand-Cone Method.

G. ANSI/ASTM D1557-02e2 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb. (4.54 Kg) Rammer and 18 inch (457 mm) Drop.

H. ANSI/ASTM D 3017-05 Test Methods for Moisture Content of Soils and Soil-Aggregate Mixture by Nuclear Methods (Shallow Depth).

I. ANSI/ASTM D 422-63(2007) e1 Test Method for Particle Size Analysis of Soil.

J. ANSI/ASTM D 4318-05 Test Method for Liquid Limit, Plastic Limit, and Plasticity Limit.

K. CALTRANS Standard Specifications Section 17.

L. CAL-OSHA, Title 8, Section 1590 (e).

M. Any work within the street, highway or right-of-way shall be performed in accordance with the requirement of the governmental agencies having jurisdiction, and shall not begin until all of those governing authorities have been notified.

1.7 DELIVERY, STORAGE AND HANDLING

A. Transport, store and handle in strict accord with the local jurisdiction.

B. Make delivery to job when notified by Contractor verifying that the job is ready to receive the work of this Section and that arrangements have been made to properly store, handle and protect such materials and work.

1.8 PROJECT CONDITIONS

A. Existing civil, mechanical and electrical improvements are shown on respective site plans to the extent known. Should the Contractor encounter any deviation between actual conditions and those shown, he is to immediately notify the Architect before continuing work.

1.9 EXISTING SITE CONDITIONS

A. Contractor shall acquaint himself with all site conditions. If unknown active utilities are encountered during work, notify Architect promptly for instructions. Failure to notify will make Contractor liable for damage to these utilities arising from Contractor's operations subsequent to discovery of such unknown active utilities.

1.10 PROTECTION

A. Adequate protection measures shall be provided to protect workmen and passers-by on and off the site. Adjacent property shall be fully protected throughout the operations. Blasting will not be permitted. Prevent damage to adjoining improvements and properties both above and below grade. Restore such improvements to original condition should damage occur. Replace trees and shrubs outside building area disturbed by operations.

B. In accordance with generally accepted construction practices, the Contractor shall be solely and completely responsible for working conditions at the job site, including safety of all persons and property during performance of the work. This requirement shall apply continuously and shall not be limited to normal working hours.

C. Any construction review of the Contractor's performance conducted by the Geotechnical Engineer is not intended to include review of the adequacy of the Contractor's safety measures, in, on, or near the construction site.

D. Provide shoring, sheeting, sheet piles and or bracing to prevent caving, erosion or gullying of sides of excavation.

E. Surface Drainage: Provide for surface drainage during period of construction in manner to avoid creating nuisance to adjacent areas. The contractor shall make a reasonable effort on a daily basis to keep all excavations and the site free from water during entire progress of work, regardless of cause, source, or nature of water shall be kept free of mud, dirt or similar nuisances resulting from earthwork operations.

F. The site and adjacent influenced areas shall be watered as required to suppress dust nuisance. Dust control measures shall be in accordance with the local jurisdiction.

G. Trees: Carefully protect existing trees that are to remain. Provide temporary irrigation as necessary to maintain health of trees.

1.11 SEASONAL LIMITS

A. No fill material shall be placed, spread or rolled during unfavorable weather conditions. When work is interrupted by rains, fill operations shall not be resumed until field tests indicate that moisture content and density of fill are satisfactory.

B. Excessively wet fill material shall be bladed and aerated per section 3.8, B.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Water: Furnish all required water for construction purposes, including compaction and dust control. Water shall be potable.

B. Aggregate Base: Provide Class 2 3/4" Aggregate Base conforming to standard gradation as specified in Cal Trans Standard Specifications, Section 26,-1.02A.

2.2 INSPECTION LAYOUT AND PREPARATION

A. Prior to installation of the work of this Section, carefully inspect and verify by field measurements that installed work of all other trades is complete to the point were this installation may properly commence

B. Layout all work, establish grades, locate existing underground utilities, set markers and stakes, setup and maintain barricades and protection facilities; all prior to beginning actual earthwork operations. Layout and staking shall be done by a licensed Land Surveyor or Professional Civil Engineer.

C. Verify that specified items may be installed in accordance with the approved design.

D. In event of discrepancy, immediately notify Owner and the Architect. Do not proceed in discrepant areas until discrepancies have been fully resolved.

2.3 PERFORMANCE

A. GENERAL:

1. General: Do all grading, excavating and cutting necessary to conform finish grade and contours as shown. All cuts shall be made to true surface of subgrade.
2. Archaeological Artifacts: Should any artifacts of possible historic interest be encountered during earthwork operations, halt all work in area of discovery and immediately contact the Architect for notification of appropriate authorities.
3. Degree of Compaction: Percentage of maximum density, hereinafter specified as degree of compaction required, means density equivalent to that percentage of maximum dry density determined by ASTM D1557 Compaction Test method, and such expressed percentage thereof will be minimum acceptable compaction for specified work.

4. Optimum Moisture Content: Optimum moisture content will be determined by Soils Engineer and this information supplied to Contractor. Optimum moisture content shall be maintained until subgrade is covered by surfacing materials.

2.4 DEMOLITION, DISPOSAL AND DISPOSITION OF UNDESIRABLE MAN-MADE FEATURES

A. All other obstructions, such as abandoned utility lines, septic tanks, concrete foundations, and the like shall be removed from site. Excavations resulting from these removal activities shall be cleaned of all loose materials, dish shaped, and widened as necessary to permit access for compaction equipment. Areas exposed by any required over-excavation should be scarified to a depth of 6", moisture-conditioned to near optimum moisture content, and recompacted to at least 90% of the maximum dry density.

2.5 TESTING AND OBSERVATION

A. All grading and earthwork operations shall be observed by the Inspector of Record serving as the representative of the Owner.

B. Earthwork shall not be performed without the notification or approval of the Inspector of Record. The Contractor shall notify the Inspector of Record at least two (2) working days prior to commencement of any aspect of the site earthwork.

C. If the Contractor should fail to meet the compaction or design requirements embodied in this document and on the applicable plans, he shall make the necessary readjustments until all work is deemed satisfactory, as determined by the Inspector of Record or Architect/Engineer.

2.6 CLEARING AND GRUBBING

A. Prior to grading, remove all debris off-site. Remove grass, sod, trees and brush including the root systems. Holes resulting from tree and brush removal should be prepared and backfilled in accordance with paragraphs 3.7, 3.8, 3.9, and 3.10. This may require deepening and/or widening the holes to adequately remove disturbed soil and provide room for compaction equipment. Strip the surface of all organics. Cap off or modify existing irrigation to conform to new work

2.7 CUTTING

A. Do all cutting necessary to bring finish grade to elevations shown on Drawings.

B. When excavation through roots is necessary, cut roots by hand.

C. Carefully excavate around existing utilities to avoid unnecessary damage. The contractor shall anticipate and perform hand work near existing utilities as shown on the survey, without additional claims or cost.

2.8 SUBGRADE PREPARATION

A. Grade compact and finish all subgrades within a tolerance of 0.10' of grades as indicated on Drawings and so as not to pool water. Subgrade within building pads and concrete walks shall be within 0.05' of grades indicated.

B. After clearing, grubbing and cutting, subsurface shall be plowed or scarified to a depth of at least 6", until surface is free from ruts, hummocks or other uneven features. Moisture condition to (optimum) (2% above optimum) moisture content and recompact to at least 90% of the maximum dry density as determined by ASTM Test Method D1557. If the existing soils are at a water content higher than specified, the contractor shall provide multiple daily aerations by ripping, blading, and/or discing to dry the soils to a moisture content where the specified degree of compaction can be achieved. After seven consecutive working days of daily aerations, and the moisture content of the soil remains higher than specified, the contractor shall notify the architect. If the existing soils have a moisture content lower than specified, the contractor shall scarify, rip, water and blade existing soil to achieve specified moisture content. The contractor shall make proper allowance in schedule and methods to complete this work.

C. After subgrade for fill within building pad area or within paved areas has been cleared, plowed and scarified, it shall be disked or bladed until uniform and free from large clods, brought to (optimum) (2% above optimum) moisture content and compacted to not less than 90% of maximum dry density, as determined by ASTM Test Method D1557, and such expressed percentage thereof will be minimum acceptable density for specified work.

D. Subgrade in areas to receive landscaping shall be compacted to (85%).

E. Where Contractor over-excavates building pads through error, resulting excavation shall be recompacted as engineered fill at Contractor's expense.

F. Selected fill material shall be placed in layers which, when compacted, shall not exceed 6 inches in compacted thickness. Each layer shall be spread evenly and thoroughly mixed to insure uniformity in moisture content.

G. Selected fill material shall be moisture-conditioned to specified moisture content. Selected fill material shall be unfrozen. When moisture content of fill material is below that specified, add water until proper moisture content is achieved. When moisture content is above that specified, aerate by blading or other methods mentioned in 3.08 B until moisture content is satisfactory.

H. After each layer has been placed, mixed and spread evenly, it shall be thoroughly compacted to a minimum of 90% as determined by the ASTM D1557 Compaction Test. Compact each layer over its entire area until desired density has been obtained.

I. Recompaction of Fill in Trenches and Compaction of Fill Adjacent to Walls: Where trenches must be excavated, backfill with material excavated. Place in lifts that when compacted do not exceed 6", moisture conditioned to 2% moisture content, and compact to a minimum of 90% relative compaction in building pad and paved areas, and to 90% relative compaction in landscape areas.

J. Jetting of fill materials will not be allowed.

2.9 FINAL SUBGRADE COMPACTION

A. Paved Areas: Upper 6" of all final subgrades supporting pavement sections and all other flatwork shall be brought to specified moisture content and shall be uniformly compacted to not less than 95% of maximum dry density, regardless of whether final subgrade elevation is attained by filling, excavation, or is left at existing grade. After acceptance of final compaction test, contractor shall maintain the required moisture content of subgrade until concrete flatwork is placed.

B. Other Fill and Backfill: Upper 6” of all other final subgrades or finish grades shall be compacted to 90% of maximum dry density.

2.10 FINISH GRADING

A. At completion of project, site shall be finished graded, as indicated on Drawings. Finish grades shall be "flat graded" to grades shown on the drawing. Mounding of finish grades will not be allowed unless otherwise directed on the landscape drawings. Tolerances for finish grades in drainage swales shall be +-0.05'. Tie in new and existing finish grades. Leave all landscaped areas in finish condition for lawn seeding. Landscaped planters shall be graded uniformly from edge of planter to inlets. If sod is used for turf areas the finish grade on which it is placed shall be lowered to allow for sod thickness.

B. All landscape areas shall be left free of rock or foreign material.

C. All landscape areas shall be approved by Architect prior to any planting

2.11 SURPLUS MATERIAL

A. Excavated material not required for grading or backfill shall be removed from site at contractor's expense.

2.12 INSTALLING DECOMPOSED GRANITE(DG) ON WALKING PATHS(ROTO-TILLER APPLICATION METHOD)

A. Grade, contour and compact the soil to final elevations.

B. :Place 4” of Decomposed granite

C. Spray-apply the required amount of properly diluted PolyPavement onto the loose soil.

D. Till the soil with roto tiller to thoroughly mix soil and PolyPavement.

E. . Re-compact the soil with a steel drum roller.

F. Spray-apply the required amount of properly diluted PolyPavement onto the compact soil surface.

G. Allow the soil to dry.

2.13 CLEANING

A. Refer to Section 01 7700.

B. Remove from fill all vegetation, wood, form lumber, casual lumber, and shavings, in contact with ground; buried wood will not be permitted in any fill.

- END OF SECTION -

PART 1 - GENERAL

1.1 INCLUSION OF OTHER CONTRACT DOCUMENTS

A. The General Conditions, Supplementary Conditions and Division 1 are fully applicable to this Section, as if repeated herein.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 01 5000, Temporary Facilities and Controls.

B. Pertinent Sections specifying Volatile Organic Compound (VOC) Content Restrictions.

C. Section 01 8113, Sustainable Design Requirements.

1.3 QUALITY ASSURANCE

A. Use only new materials and products, unless existing materials or products are specifically shown otherwise on the Drawings to be salvaged and re-used.

B. All materials, components, assemblies, workmanship and installation are to be observed by the Owner's Inspector of Record. Work not so inspected is subject to uncovering and replacement.

C. The representatives of the Owner’s testing lab will not act as supervisor of construction, nor will they direct construction operations. Neither the presence of the Owner’s testing lab representatives nor the testing by the Owner’s testing lab shall excuse the contractors or subcontractors for defects discovered in their work during or following completion of the project. Correcting inadequate compaction is the sole responsibility of the contractor.

D. Contractor shall provide verification that asphalt mix temperature meets the requirements of this specification at time of application.

E. Contractor shall be solely responsible for all subgrades built. Any repairs resulting from inadequate compaction is the responsibility of the contractor.

1.4 SUBMITTALS

A. Refer to Section 01 3300.

B. Manufacturer's Data: Submit list and complete descriptive data of all products proposed for use. Include manufacturer's specifications, published warranty or guarantee, installation instructions, and maintenance instructions.

C. Guarantee of Contractor/Subcontractor per Article 1.5.

1.5 GUARANTEE

A. Refer to General Conditions and Section 01 3300.

B. Submit fully executed Guarantee with submittal package required by Article 1.4.

1.6 REFERENCES AND STANDARDS

A. California Building Code (CBC), latest edition, as adopted by the California Division of the State Architect (DSA).

B. California Green Building Standards Code, latest edition, as adopted by the California Division of the State Architect (DSA).

C. ANSI/ASTM D698-00 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5 lb (2.49 Kg) Rammer and 12 inch (304.8 mm) Drop.

D. ANSI/ASTM D1556-00 - Test Method for Density of Soil in Place by the Sand-Cone Method.

E. ANSI/ASTM D1557-02 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb. (4.54 Kg) Rammer and 18 inch (457 mm) Drop.

F. ANSI/ASTM D 3017-05 Test Methods for Moisture Content of Soils and Soil-Aggregate Mixture by Nuclear Methods (Shallow Depth).

G. ANSI/ASTM D 422-63 Test Method for Particle Size Analysis of Soil.

H. ANSI/ASTM D 4318-05 Test Method for Liquid Limit, Plastic Limit, and Plasticity Limit.

I. CALTRANS Standard Specifications.

J. CAL-OSHA, Title 8, Section 1590 (e).

K. Any work within the street, highway or right-of-way shall be performed in accordance with the requirement of the governmental agencies having jurisdiction, and shall not begin until all of those governing authorities have been notified.

1.7 DELIVERY, STORAGE AND HANDLING

A. Transport, store and handle in strict accord with the local jurisdiction.

B. Make delivery to job when notified by Contractor verifying that the job is ready to receive the work of this Section and that arrangements have been made to properly store, handle and protect such materials and work.

1.8 PROJECT CONDITIONS

A. Environmental Requirements:

1. Base Course: Do not lay base course on muddy subgrade, during wet weather, or when atmospheric temperature is below 40 degrees F.
2. Asphalt Surfacing: Do not apply asphaltic surfacing on wet base, during. weather, or when atmospheric temperature is below 50 degrees F.

1.9 EXISTING SITE CONDITIONS

A. Contractor shall acquaint himself with all site conditions. If unknown active utilities are encountered during work, notify Architect promptly for instructions. Failure to notify will make Contractor liable for damage to these utilities arising from Contractor's operations subsequent to discovery of such unknown active utilities.

1.10 PROTECTION

A. Adequate protection measures shall be provided to protect workmen and passers-by on and off the site. Adjacent property shall be fully protected throughout the operations. Blasting will not be permitted. Prevent damage to adjoining improvements and properties both above and below grade. Restore such improvements to original condition should damage occur. Replace trees and shrubs outside building area disturbed by operations.

B. In accordance with generally accepted construction practices, the Contractor shall be solely and completely responsible for working conditions at the job site, including safety of all persons and property during performance of the work. This requirement shall apply continuously and shall not be limited to normal working hours.

C. Any construction review of the Contractor's performance conducted by the owner’s representative is not intended to include review of the adequacy of the Contractor's safety measures, in, on, or near the construction site.

D. Surface Drainage: Provide for surface drainage during period of construction in manner to avoid creating nuisance to adjacent areas. The contractor shall make a reasonable effort on a daily basis to keep all excavations and the site free from water during entire progress of work, regardless of cause, source, or nature of water.

E. Adjacent streets and sidewalks shall be kept free of mud, dirt or similar nuisances resulting from earthwork operations.

F. The site and adjacent influenced areas shall be watered as required to suppress dust nuisance. Dust control measures shall be in accordance with the local jurisdiction.

1.11 SEASONAL LIMITS

A. No fill material shall be placed, spread or rolled during unfavorable weather conditions. When work is interrupted by rains, fill operations shall not be resumed until field tests indicate that moisture content and density of fill are satisfactory.

1.12 TESTING

A. General: Refer to Section 01 4523 – TESTING & INSPECTION SERVICES AND STRUCTURAL TESTS AND INSPECTIONS LIST, DSA-103.

B. Geotechnical Engineer: Owner is retaining a Geotechnical Engineer to determine compliance of fill with Specifications, and to direct adjustments in fill operations. Costs of Geotechnical Engineer will be borne by Owner; except those costs incurred for re-tests or re-inspection will be paid by Owner and backcharged to Contractor.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Sterilant: Soil sterilizer shall be CIBA GEIGY's Pramatol 25-E, Treflan EC or Thompson-Hayward Casoron.

1. Soil sterilizer shall be applied in strict accordance with manufacturer's directions

B. Base Course Aggregate: State Specifications, Section 26, Class 2 aggregate base (3/4" max.).

C. Asphalt Binder: Steam-refined paving asphalt conforming to State Specifications, Section 92, viscosity grade PG 64-10. Asphalt binder additives for WMA per Caltrans approved list of manufacturer’s.

D. Liquid Asphalt Tack Coat: Per CALTRANS section 94.

E. Surface Course Aggregate: Mineral aggregates for Type "B" asphalt concrete, conforming to State Specifications 39-2.02, Type B, ½” maximum, medium grading. 3/8" maximum grading at Playcourt.

F. Seal Coat: shall be a pre-mixed asphalt emulsion blended with select fillers and fibers such as:

1. “Park-Top No. 302”, Western Colloid Products.
2. “Overcoat”, Reed and Gram.
3. “Drivewalk”, Conoco Oil.

G. Wood Headers and Stakes: Pressure treated.

H. Pavement Marking: Colors as directed by Architect. Colors of painted traffic stripes and pavement markings must comply with ASTM D 6628.

I. Crack Filler; QPR model CAR08, 10oz asphalt crack filler; Star STA-FLEX Trowel Grade crack filler or approved equal.

J. Reclaimed Asphalt Pavement (RAP). HMA Type A or Type B may be produced using RAP providing it does not exceed 15% or the aggregate blend.

2.2 MIXES

A. General: Plant mixed conforming to State Specifications, Section 39, Type B, ½" maximum, medium grading. 3/8" maximum grading shall be used at hardcourt.

B. Temperature of Hot Mix Asphalt: Not less than 275 degrees F nor more than 325 degrees F when added to aggregate.

C. Temperature of Hot Mix Aggregate: Not less than 250 degrees F nor more than 325 degrees F when asphalt is added.

D. Temperature of Hot Mix Asphalt Concrete: Asphalt shall be not less than 285 degrees at time of application, nor more than 350 degrees. Asphalt not meeting the required temperature shall not be used.

E. Temperature of Warm Mix Asphalt: Mixing and placement; per the approved manufactures heat range recommendations for mixing and placement.

PART 3 - EXECUTION

3.1 EXAMINATION OF CONDITIONS

A. Conditions of Work in Place: Subsurfaces which are to receive materials specified under this Section shall be carefully examined before beginning work hereunder, and any defects therein shall be reported, in writing, to the Architect. Work shall not be started until such defects have been corrected. Starting of work shall imply acceptance of conditions as they exist.

3.2 PREPARATION

A. Sub-Grade: Clean, shape and compact to hard surface free from elevations or depressions exceeding 0.05' in 10' from true plan. Compact per Section 31 2000. Compaction and moisture content shall be verified immediately prior to placement of asphalt. Proof roll subbase in presence of geotechnical engineer prior to placement of aggregate base.

3.3 INSTALLATION

A. Headers:

1. General: Install as edging to asphalt paving, except where adjoining existing pavement, concrete curbs, walks or building.

2. Existing Headers: Remove existing headers where new paving will join existing. Saw cut existing asphalt to provide clean edge.

3. Lines and Levels: Install true to line and grade. Cut off tops of stakes 2-inches below top of header so they will not be visible on completion of job.

B. Asphalt Paving:

1. Base Course: Install in accord with State Specifications, Section 26. Compact to relative compaction of not less than 95%, ASTM D1557. The material shall be deposited on the subgrade in such a manner as to provide a uniform section of material within five percent tolerance of the predetermined required depth. Deposition will be by spreader box or bottom dump truck to prevent segregation of the material. The material so deposited on the subgrade shall have sufficient moisture which, in the opinion of the Architect is adequate to prevent excessive segregation. It shall then be immediately spread to its planned grade and cross section. Undue segregation of material, excessive drifting or spotting of material will not be permitted. If in the opinion of the site geotechnical engineer, the material is unsuitably segregated, it shall be removed or completely reworked to provide the desired uniformity of the material.

2. Sterilant: Apply specified material at manufacturer's recommended rate. Applicator of sterilant material shall be responsible for determining location of all planter areas. Apply specified material over entire base course area just prior to application of asphalt. Follow manufacturer's printed directions.

3. Liquid Asphalt Tack Coat: Apply as "tack coat" to all vertical surfaces of existing paving, curbs, walks, and construction joints in surfacing against which paving is to be placed.

4. Asphalt Concrete Surface Course:

    a. Comply with State Specifications, 39-6 except as modified below.

        1) Final gradation shall be smooth, uniform and free of ruts, humps, depressions or irregularities, with a minimum density of 95% of the test maximum density determined by California Test Methods #304 and 375. Maximum variation 1/8 inch in 10' when measured with steel straightedge in any one direction. Test paved areas for proper drainage by applying water to cover area. Correct portions that do not drain properly by patching with plant mix. In no case shall accessible parking spaces or loading and unloading areas exceed 2% slope in any direction.

        2) Asphalt material shall be delivered to the project site in a covered condition to maintain acceptable temperature.

5. Placement and adjustment of Frames, Covers, Boxes and Grates: The Contractor shall set and adjust to finish grade all proposed and existing frames, covers, boxes, and grates of all manholes, drop inlets, drain boxes, valves, cleanouts, electrical boxes and other appurtenant structures prior to placement of asphaltic concrete.

6. Water Testing: All paved areas shall be water tested, to check drainage, in the presence of the project inspector prior to placement of seal coat. The surface of asphalt paving shall not vary more than 1/8 inch above or below the grade established on the plans. If variations in grade are present, they will be corrected by overlaying paving and/or pavement removal and replacement as directed by the Architect.

7. Patching: Cut existing paving square and plumb at all edges to be joined by new paving. In trenches; grind existing asphalt on each side of trench 3” wide x ½ the depth of the section. Apply tact coat to vertical surfaces before installing new work. Warp carefully to flush surface, with seal over joints, and feather edge. Sawcut, remove and patch existing paving where cutting is necessary for installation of piping or conduits under Divisions 15, 16 and 33.

8. Seal Coat:

a. Seal coat shall be applied to all new AC pavement in this contract no sooner than 30 days from time of asphalt placement.

b. Surface Preparation: surface shall be clean of all dirt, sand, oil or grease. Hose down entire area with a strong jet of water to remove all debris. Remove soft, loose, or otherwise damaged areas of asphalt concrete to full depth of damage and replace with compacted asphalt concrete as specified herein. Minor holes and imperfections may be patched using hot mix asphalt or mastic using sand/SS-1-H. Use wire brush for removal of oil and grease; prime with shellac or synthetic resin as recommended by manufacturer of pavement sealer material.

c. Seal Coat Seal Application: Thoroughly mix materials in the presence of the onsite inspector. Failure to do so will be cause for rejection. Apply in accordance with manufacturer's written instructions.

d. Clean-Up and Precautions: As recommended by pavement sealer material manufacturer.

3.4 CLEANING

A. Upon completion of work of this Section promptly remove from the working area all scraps, debris and surplus material of this Section.

B. Clean excess material from surface of all concrete walks and utility structures.

- END OF SECTION -

PART 1 - GENERAL

1.1 INCLUSION OF OTHER CONTRACT DOCUMENTS

A. The General Conditions, Supplementary Conditions and Division 1 are fully applicable to this Section, as if repeated herein.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 31 0000, Earthwork.

1.3 QUALITY ASSURANCE

A. Use only new materials and products.

B. Use materials and products of one manufacturer whenever possible.

C. All materials, components, assemblies, workmanship and installation are to be observed by the Owner's Inspector of Record. Work not so inspected is subject to uncovering and replacement.

D. Sieve analysis from testing laboratories identifying rock/sand percentages within the concrete mix; or class 2 aggregate base shall have the current project name and project location identified on the report. Outdated analytical reports greater than 90 days old will not be accepted.

1.4 SUBMITTALS

A. Refer to Section 01 3300.

B. Manufacturer's Data: Submit list and complete descriptive data of all products proposed for use. Include manufacturer's specifications, published warranty or guarantee, installation instructions, and maintenance instructions

C. Materials list: Submit to the Architect a complete list of all materials proposed to be used in this portion of the work. Submitted items should include but are not limited to sand, gravel, admixtures, surface treatments, coloring agents, sealers, fibers, cast-in-place accessories, forming and curing products and concrete mix designs.

D. With concrete submittal, provide documented history of mix design performance.

E. Guarantee of Contractor/Subcontractor per Article 1.5.

1.5 GUARANTEE

A. Refer to General Conditions and Section 01 3300.

B. Submit fully executed Guarantee with submittal package required by Article 1.4. See Part 3 of this specification regarding concrete finishing and defective concrete.

1.6 REFERENCES AND STANDARDS

A. California Building Code (CBC), edition as noted on the drawings, as adopted by the California Division of the State Architect (DSA).

B. ACI Standards, ACI 211.1-91, ACI 318-14, ACI 302.1R-15, ACI 301-20, ACI 305R-20, ACI 306R-16, ACI 308R-16.

C. ASTM C-94, Specification for Ready-Mixed Concrete.

D. Concrete Reinforcing Steel Institute (CRSI) Manual of Standard Practice (latest edition).

E. ACI 347 Recommended Practice for Concrete Formwork.

F. ASTM – American Society for Testing and Materials.

1.7 DELIVERY, STORAGE AND HANDLING

A. Deliver undamaged products to job in manufacturer's sealed containers and/or original bundles with tags and labels intact.

B. Store materials in protected, dry conditions off of ground and in areas so as to not interfere with the progress of the work.

C. Transport, store and handle in strict accord with the manufacturer's written recommendations.

D. Make delivery to job when notified by Contractor verifying that the job is ready to receive the work of this Section and that arrangements have been made to properly store, handle and protect such materials and work.

E. Store cement in weather tight building, permitting easy inspection and identification. Protect from dampness. Lumpy or stale cement will be rejected.

F. Aggregates: Prevent excessive segregation, or contamination with other materials or other sizes of aggregate. Use only one supply source for each aggregate stock pile.

1.8 TESTING

A. Cement and Reinforcing shall be tested in accordance with CBC Section 1916A. Testing of reinforcing may be waived in accordance with Section 1916A.4 when approved by the Structural Engineer and DSA.

1.9 ADEQUACY AND INSPECTION

A. Design, erect, support, brace and maintain formwork and shoring to safely support all vertical and lateral loads that might be applied until such loads can be carried by concrete.

B. Notify Inspector, Architect and DSA at least 48 hours prior to placing of concrete.

1.10 PROTECTION

A. Finish surfaces shall be protected at all times from concrete pour. Inspect forming against such work and establish tight leak-proof seal before concrete is poured. Finish work damaged, defaced or vandalized during the course of construction shall be replaced by contractor at contractor expense.

1.11 FIELD MEASUREMENTS

A. Make and be responsible for all field dimensions necessary for proper fitting, slopes and completion of work. Report discrepancies to Architect before proceeding.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cement: Portland cement, ASTM C150, Type II, per ACI 318 Section 3.2.

B. Concrete Aggregates: Normal weight aggregates shall conform to ASTM C33, except as modified by this section. Combined grading shall meet limits of ASTM C33. Lightweight aggregate shall conform to ASTM C330, suitably processed, washed and screened, and shall consist of durable particles without adherent coatings.

C. Water: Clean and free from deleterious amounts of acids, alkalis, scale, or organic materials and per ACI 318 Section 3.4.

D. Fly Ash: Western Fly Ash, conforming to ASTM C618 for Class N or Class F materials (Class C is not permitted). Not more than 15% (by mass) may be substituted for portland cement.

E. Water Reducing Admixture: Admixture to improve placing, reduce water cement ratio, and ultimate shrinkage may be used. Provide WRDA 64 by Grace Construction Products or approved equal. Admixture shall conform to ASTM C494 and ACI 318 Section 3.6. Such admixture must receive prior approval by the Architect, Structural Engineer, and the Testing Lab, and shall be included in original design mix.

F. Air-entraining Admixture: Daravair 1000 by Grace Construction Products or approved equal. Admixture must conform to ASTM C260 and CBC Section 1904 A.2.1.

G. Surface Retarder (for exposed aggregate finishes): Rugasol-S by Sika Corporation or approved equal.

H. Surface Treatments and Coloring Agents:

1. Glare Reduction Colorant: “L10 Glare Reducer” as manufactured by Master Builders/L.M. Scofield or approved equal. Provide at all exterior concrete slabs, walks, ramps, stairs (including bleachers) and other exposed flatwork to eliminate glare. Omit glare reduction colorant where Color Hardener, Integral Color or Stain are utilized. Provide 2-pounds of colorant per cubic yard of concrete. This is a maximum amount and Architect may adjust proportion to a lesser amount if

desired. Add colorant to mix in accordance with manufacturer's printed instructions

2. Heavy Duty Color Hardener: "Emerchrome" Floor Hardener; dust on non-slip, non-rusting, non-polishing, colored/uncolored hardener as manufactured by the L. M. Scofield Company or approved equal. Colors as selected by Architect. Apply “Lithrochrome Colorwax”, color-matched curing material by L.M. Scofield or accepted equal, following installation of color hardener per manufacturer’s recommendations. Colors to be selected by Architect from standard colors.
3. Integral Color-Exterior Concrete: “Chromix P/Chromix L”, colored, water reducing, set controlling admixture by L.M. Scofield or approved equal. Apply “Lithrochrome Colorwax”, color-matched curing material by L.M. Scofield or accepted equal, following installation of Integral color concrete per manufacturer’s recommendations. Colors to be selected by Architect rom standard colors
4.
5. Stain-Exterior Concrete: “Lithochrome Tintura” by L.M. Scofield. Apply per manufacturers recommendations. Apply “Cementone”, clear, low-gloss sealer by L.M. Scofield or accepted equal, following installation of stained concrete per manufacturer’s recommendations. Colors to be selected by Architect from standard colors.

I. Form Material (Concrete Exposed to View): 5/8" (min) APA B-B Ply-form, steel or Sonotubes.

J. Form Material (Concrete concealed from View): 5/8" (min) APA B-B Plyform, steel or 1 x 8 DF. No. 2 or better.

K. Form Ties: Snap off metal of fixed length: leaving no metal within 1-1/2 inches of surface and no fractures, spalls or other surface defects larger than one-inch diameter; manufactured by Burke, Dayton Superior, or accepted equal.

L. Spreaders: Metal (no wood permitted).

M. Form Coating: Material which will leave no residue on concrete surface that will interfere with surface coating, as approved by the Architect.

N. Chamfer Strips: Rigid PVC, ¾” x ¾”, in maximum possible lengths; manufactured by Burke, Greenstreak, Vulco, or accepted equal.

O. Expansion Joint Material: Preformed 3/8" fiber material, with bituminous binder manufactured for use as concrete expansion joint material, as accepted by the Architect.

P. Reinforcement Bars: New billet steel deformed bars conforming to requirements of ASTM A615 or ASTM A706; Grade 60. Dowels for installation through expansion joints or construction joints to existing sidewalks or concrete features shall be smooth or shall be sleeved on one end for slippage.

Q. Reinforcing supports: Galvanized metal chairs or spacers or metal hangers, accurately placed 3'-0" O.C.E.W. Staggered and each support securely fastened to steel reinforcement in place. Bottom bars in footings may be supported with 3" concrete blocks with embedded wire ties. Concrete supports without wire ties will not be allowed.

R. Curing Compound (for exterior slabs only): Burke Aqua Resin Cure by Burke by Edoco, 1100 Clear by W.R. Meadows or accepted equal. Water based membrane-forming concrete curing compound meeting ASTM C 309 and C1315.

S. Concrete Bonding Agent: Weld-Crete by Larson Products Corp., Daraweld C by Grace Construction Products or accepted equal.

T. Patching Mortar: Meadow-Crete GPS, one-component, trowel applied, polymer enhanced, shrinkage-compensated, fiber reinforced, cementitious repair mortar for horizontal, vertical and overhead applications as manufactured by W.R. Meadows or accepted equal.

U. Non-shrink Grout: Masterflow 713 Plus by Master Builders or approved equal. Premixed, non-metallic, no chlorides, non-staining and non-shrinking per CRD-C621, Corps of Engineers Specification and ASTM C 1107, Grades B and C.

V. Aggregate Base: Class 2 AB per Caltrans specification section 26-1.02A.

W. Joint sealant for expansion joints: Single component silicone sealant, Type S, ASTM D5893.

1. Reference Standard: ASTM C920, Grade P, Class 25, Use T.
2. Dow Corning 890-SL (self-leveling) Silicone, or accepted equal.
3. Dow Corning 888-NS (non-sagging) Silicone, at slopes exceeding 5%. May not be used at asphalt surfaces.
4. Color: Custom color as selected by Architect.

X. Pre- Formed plastic Expansion Joint; W.R. Meadows 3/8" "Snap Cap", Tex-Trude expansion joint cap, or an approved equal.

Y. Exposed Aggregate: Black and White, washed, 3/8-inch pea gravel conforming to ASTM C33. Exposed Aggregate concrete shall be provided as the aggregate for Class B concrete as described in article 2.2 and shall replace the 1" max. size aggregate described in the Class B concrete mix design. Provide 1,300 pounds of Exposed Aggregate per cubic yard of concrete. Following placement and finishing, utilize specified Surface Retarder.

2.2 CONCRETE DESIGN AND CLASS

A. Designed Strength and Classes of Concrete: The following mixes are not applicable to concrete items exceeding 4 feet in height above the adjacent grade.

1. Class "B": Concrete shall have 1" max. size aggregate, shall have 3000 psi min. at 28 day strength with a maximum water to cementitious ratio no greater than

0.50. Use for exterior slabs, including walks, vehicular paved surfaces, manhole bases, poured-in-place drop inlets, curbs, valley gutters, curb & gutter and other concrete of like nature.

2. Class "D" concrete of 1" max. size aggregate shall have 3500 psi 28 day strength with a maximum water to cementitious materials ratio of 0.55. Use for footings and retaining walls not attached to buildings, and planter walls, monument signs, and other site concrete not described for use in Class “B”.

B. Slump Limits: Provide concrete, at point of final discharge, of proper consistency determined by Test Method ASTM C143 with a slumps of 4" plus or minus 1".

C. Mix Design: All concrete used in this work will be designed for strength in accordance with provisions of CBC, Section 1905A.3. Should the Contractor desire to pump concrete, a modified mix design will need to be submitted for review. Fly ash may be used in concrete to improve workability in amounts up to 15% of the total cementitious weight.

D. Air Entrainment; Per the Local Jurisdiction minimum requirements, but no less than 3%.

2.3 MIXING OF CONCRETE

A. Conform to requirements of CBC, Chapter 19A.

B. All concrete shall be mixed until there is uniform distribution of material and mass is uniform and homogenous; mixer must be discharged completely before the mixer is recharged.

C. Concrete shall be Ready-mixed Concrete: Mix and deliver in accordance with the requirements set forth in ASTM C94 and ACI 301. Batch Plant inspection may be waived in accordance with CBC Section 1704A.4A, when approved by Structural Engineer and DSA.

1. Approved Testing Laboratory shall check the first batching at the start of the work and furnish mix proportions to the Licensed Weighmaster.
2. Licensed Weighmaster to positively identify materials as to quantity and to certify to each load by ticket.
3. Ticket shall be transmitted to Project Inspector by truck driver with load identified thereon. Project Inspector will not accept load without load ticket identifying mix and will keep daily record of pours, identifying each truck, its load and time of receipt and will transmit two copies of record to DSA.
4. At end of project, Weighmaster shall furnish affidavit to DSA on form satisfactory to DSA, certifying that all concrete furnished conforms in every particular and to proportions established by mix designs.
5. Placement of concrete shall occur as rapidly as possible after batching and in a manner which will assure that the required quality of the concrete is maintained. In no case may concrete be placed more than 90 minutes from batch time.
6. Water may be added be added to the mix only if neither the maximum permissible water-cement ratio nor the maximum slump is exceeded. In no case

shall more than 10 gallons of water shall be added to a full 9 yard load, or 1 gal. per yard on remaining concrete within the drum providing load tag indicates at time of mixing at plant will allow for additional water.

2.4 MATERIALS TESTING

A. Materials testing of concrete and continuous batch plant inspection may be waived in accordance CBC Sections 1705A.3.3 when approved by Structural Engineer and DSA.

B. Testing of concrete shall be performed per article 3.12 of this specification.

2.5 EQUIPMENT

A. Handling and mixing of concrete: Project Inspector may order removal of any equipment which in his opinion is insufficient or in any way unsuitable.

PART 3 - EXECUTION

3.1 APPROVAL OF FORMS AND REINFORCEMENTS

A. Forms and reinforcements are subject to approval by the Project Inspector, and notice of readiness to place first pour shall be given to DSA, Architect and Structural Engineer 48 hours prior to placement of concrete. Before placing concrete, clean tools, equipment and remove all debris from areas to receive concrete. Clean all reinforcing and other embedded items off all coatings oil, and mud that may impair bond with concrete.

B. All reinforcing steel shall be adequately supported by approved devices on centers close enough to prevent any sagging.

C. All reinforcing bar lap splices shall be staggered a minimum of 5 ft.

D. Additional reinforcing steel shall be placed around all utility boxes, valve boxes, manhole frames and covers that are located within the concrete placements.

1. The bars shall be placed so that there will be a minimum of 1 ½" clearance and a maximum of 3" clearance. The reinforcing steel shall be placed mid-depth of concrete slab.

E. At all right angles or intersections of concrete walks, additional 2'x2' #5, 90 degree bars shall be added at all inside corners for additional crack control. The bars shall be placed 2" from concrete forms and supports at mid-depth of slab.

3.2 PROTECTION

A. Protect work and materials of this Section prior to and during installation, and protect the installed work and materials of other trades.

B. In the event of damage, make all repairs and replacements necessary to the approval of the Architect at no additional cost to the Owner.

3.3 CLEANING

A. Reinforcement and all other embedded items at time of placing concrete to be free of rust, dirt oil or any other coatings that would impair bond to concrete.

B. Remove all wood chips, sawdust, dirt, loose concrete and other debris just before concrete is to be poured. Use compressed air for inaccessible areas. Remove all standing water from excavations.

3.4 FORMING

A. Form material shall be straight, true, sound and able to withstand deformation due to loading and effects of moist curing. Materials which have warped or delaminated, or require more than minor patching of contact surfaces, shall not be reused.

B. Build forms to shapes, lines, grades and dimensions indicated. Construct form work to maintain tolerances required by ACI 301. Forms shall be substantial, tight to prevent leakage of concrete, and properly braced and tied together to maintain position and shape. Butt joints tightly and locate on solid backing. Chamfer corners where indicated. Form bevels, grooves and recesses to neat, straight lines. Construct forms for easy removal without hammering, wedging or prying against concrete.

C. Space clamps, ties, hangers and other form accessories so that working capacities are not exceeded by loads imposed from concrete or concreting operations.

D. Build openings into vertical forms at regular intervals if necessary to facilitate concrete placement, and at bottoms of forms to permit cleaning and inspection.

E. Build in securely braced temporary bulkheads, keyed as required, at planned locations of construction joints.

F. Slope tie-wires downward to outside of wall.

G. Brace, anchor and support all cast-in items to prevent displacement or distortion.

H. During and immediately after concrete placing, tighten forms, posts and shores. Readjust to maintain grades, levels and camber.

I. Concrete paving, Curbs, Curb and Gutters, Ramps:

1. Expansion Joints: Install at locations indicated, and so that maximum distance between joints is 20’ for exterior concrete unless otherwise shown. Expansion joint material shall be full depth of concrete section. Recess for snap cap and sealant when required.
2. Curbs, Valley Gutter, and Curb & Gutter: Install expansion joints at 60’ on center, except when placing adjacent to concrete walks, the expansion joints shall align with the expansion joints shown for the concrete walks. Expansion joint material shall be full depth of concrete section. Recess for snap cap and sealant when required.

3. Isolation Joints: 3/8” felt between walls and exterior slabs or walks so that paved areas are isolated from all vertical features, unless specifically noted otherwise on plans.
4. Exterior Concrete Paving: Install expansion joints at 20’ on center maximum, both directions, unless shown otherwise on plans.
5. Ramps; whether shown or not all ramps shall have control joints and expansion joints.
    a. Control joints on ramps shall be aligned and be placed in between with the vertical posts for the handrails. The curbs, if required shall have control joints that align with the handrail posts.
    b. Expansion joints shall be placed at the upper, intermediate, and bottom landings.

3.5 FORM COATING

A. Before placement of reinforcing steel, coat faces of all forms to prevent absorption of moisture from concrete and to facilitate removal of forms. Apply specified material in conformance with manufacturer's written directions.

B. Before re-using form material, inspect, clean thoroughly and recoat.

C. Seal all cut edges.

3.6 INSTALLATION

A. General: Reinforcement shall be accurately placed at locations indicated on the drawings within required tolerances and providing required clearances. Reinforcement shall be secured prior to placement of concrete such that tolerances and clearances are maintained. Coverage shall be in accordance with Section 1907A.7 of the CBC. Keep a person on the job to maintain position of reinforcing as concrete is placed. Reinforcement must be in place before concreting is begun. Install dowels as shown on drawings. Give notice whenever pipes, conduits, sleeves, and other construction interferes with placement; obtain method of procedure to resolve interferences. All expansion and construction joints in concrete shall have dowels of size and spacing as shown, or as approved by Architect.

B. Placing Tolerances:

1. Per ACI 301 or CRSI/WCRSI Recommended Practice for Placing Reinforcing Bars, unless otherwise shown.
2. Clear distance between parallel bars in a layer shall be no less than 1”, the maximum bar diameter not 1 ½ times the maximum size of coarse aggregate.

C. Splices:

1. General: Unless otherwise shown on drawings, splice top reinforcing at midspan between supports, splice bottom reinforcing at supports and stagger splices at adjacent splices 5 foot minimum. Bar laps shall be wired together. Reinforcing steel laps shall be as follows:

a. Lap splices in concrete: Lap splice lengths shall not be less than 62 bar diameter for No. 5 bar, 56” minimum for No. 6 bars. No. 4 bar shall have a minimum of 24” splice. 93 bar diameters for No. 7 bars and larger.

b. All splices shall be staggered at 5 feet minimum.

3.7 INSPECTION

A. Approval of reinforcing steel, after installation, must be received from Inspector. Architect, Structural Engineer and DSA must be notified 48 hrs. in advance of beginning of concrete placement operations.

3.8 PLACING OF CONCRETE

A. Adjacent finish surfaces shall be protected at all times during the concrete pour and finishing. Verify that all formwork is tight and leak-proof before concrete is poured. Finish work defaced during the concrete pour and finishing shall be replaced at no extra cost to the owner.

B. Transport concrete from mixer to place of final deposit as rapidly as practicable by methods which will prevent separation or loss of ingredients. Deposit as close as practicable in final position to avoid re-handling or flowing. Partially hardened concrete must not be deposited in work. Concrete shall not be wheeled directly on top of reinforcing steel.

C. Placing: Once started, continue concrete pour continuously until section is complete between predetermined construction joints. Prevent splashing of concrete onto adjacent forms or reinforcement and remove such accumulation of hardened or partially hardened concrete from forms or reinforcement before work proceeds in that area. Free fall of concrete shall not to exceed 4'-0" in height. If necessary, provide lower openings in forms to inject concrete and to reduce fall height.

D. Remove form spreaders as placing of concrete progresses.

E. Place footings as monolithic and in one continuous pour.

F. Keep excavations free of standing water, but moisture condition sub-grade before concrete placement.

G. Compacting: All concrete shall be compacted by mechanical vibrators. Concrete shall be thoroughly worked around reinforcement and embedded fixtures and into corners of forms. Vibrating shall not be applied to concrete which has already begun to initially set nor shall it be continued so long as to cause segregation of materials.

H. Concrete Paving:

1. All concrete paving shall be formed and finished to required line and grades. Concrete paving shall be true and flat with a maximum tolerance of 1/8" in 10’for flatness. Concrete paving which is not flat and are outside of the maximum specified tolerances shall be made level by the Contractor at no additional expense to the Owner,..

2. Concrete vibrator shall be used to assist concrete placement. Contractor shall have spare concrete vibrator on site during concrete placement

I. Placing in hot weather: Comply with ACI 305R-91. Concrete shall not exceed 85 degrees F at time of placement. Concrete shall be delivered, placed and finished in a sufficiently short period of time to avoid surface dry checking. Concrete shall be kept wet continuously after tempering until implementation of curing compound procedure in accordance with this specification.

J. Placing in cold weather: Comply with ACI 306R-02. Protect from frost or freezing. No antifreeze admixtures are permitted. When deposited concrete during freezing or near-freezing weather, mix shall have temperature of at least 50 degrees F but not more than 90 degrees F. Concrete shall be maintained at temperature of at least 50 degrees F for not less than 72 hours after placing or until it has thoroughly hardened. Provide necessary thermal coverings for any flat work exposed to freezing temperatures.

3.9 CONCRETE FINISHES

A. Concrete Paving Finishing: Finish surface as required by ACI 302.1R. Use manual screeds, vibrating screeds to place concrete level and smooth. Use “jitterbugs” or other special tools designed for the purpose of forcing the course aggregate below the surface leaving a thick layer of mortar 1 inch in thickness. After tamping the concrete, wood float surface to a true and even plane. After floating with a wood bull float, make 2 passes with a steel Fresno trowel to start sealing the concrete surface. While concrete is still wet but sufficiently hardened to bear a persons weight on knee boards, start troweling with a steel hand trowel or a machine trowel in larger areas. Use sufficient pressure to bring moisture to surface. After surface moisture has disappeared, finish concrete utilizing steel, hand or power trowel. Surface shall be free from trowel marks, depressions, ridges or other blemishes. Tolerance for flatness shall be 1/8" in 10'. Provide final finish as follows:

1. Flatwork, medium broom finish: Typical finish to be used at all exterior walks, stairs and ramps. Brooming direction shall run perpendicular to slope to form non-slip surface.
2. Under no circumstances can water be added to the top surface of freshly placed concrete.

B. Curb Finishing: Steel trowel.

C. Joints and Edges: Mark-off exposed joints, where indicated, with ¼” radius x 1” deep jointer or edging tool. Joints to be clean, cut straight, parallel or square with respect to concrete walk edge. Tool all edges of control joints, walk edges, and wherever concrete walk adjoins other material or vertical surfaces. Expansion joints shall be constructed as detailed on plans.

1. The expansion joints shall be full depth as shown in the plan details. Failure to do so will result in non-compliance and shall be immediately machine cut by the contractor at his expense.

D. Exposed Concrete Surface Finishing (not including top surface of flatwork): Remove fins and rough spots immediately following removal of forms from concrete which is to be left exposed. Damaged and irregular surfaces and holes left by form clamps and sleeves shall be patched with grout. Tie wires are to be removed to below exposed surface and holes pointed up with neat cement paste similar to procedure noted under "Patching" below. Removal of tie wires shall extend to distance of 2" below established grade lines. Ends of tie wires shall be cut off flush at all other, unexposed locations. Care shall be taken to match adjacent finishes of exposed concrete surface. After patching, all concrete that is to remain exposed, shall be sacked with a grout mixture of 1-part cement, 1 1/2- parts fine sand and sufficient water to produce a consistency of thick paint. After first wetting the concrete surface, apply mixture with a brush and immediately float entire surface vigorously using a wood float. Keep damp during periods of hot weather. When set, excess grout shall be scraped from wall with edge of steel trowel, allowed to set for a time, then wiped or rubbed with dry burlap. Entire finishing operation of any area shall be completed on the same day. This treatment shall be carried to 4" below grade, and all patching and sacking shall be done immediately upon removal of the forms.

E. Stair Treads and Risers: Tool exterior stair tread and landing nosings per disabled accessible requirements in the California Building Code and as detailed. Paint every tread and landing nosing. Nosings shall contain no pockets, voids or spalls. Patching is not allowed. Damaged nosings shall be replaced.

3.10 CURING

A. Concrete paving, Curb, Curb and gutter, Valley Gutter: Cure utilizing Curing Compound. If applicable, the Contractor shall verify that the approved Curing Compound is compatible with the approved colorant system. Upon completion of job, wash clean per manufacturer’s recommendations.

1. Curing compound shall be applied in a wet puddling application. Spotty applications shall be reason for rejection and possibly concrete removal and replacement at the contractor’s expense with no compensation from the owner.

B. No Curing Compound shall be applied to areas scheduled to receive resilient track surface including, curbs, ramps, run ways, etc.

3.11 DEFECTIVE CONCRETE

A. Determination of defective concrete shall be made by the Architect or Engineer. His opinion shall be final in identifying areas to be replaced, repaired or patched.

B. The Owner reserves the right to survey the flatwork, if it is determined to be outside of the maximum tolerance for flatness. If the flatwork is found to be out of tolerance, then the Contractor will be required to replace concrete. The Contractor will be responsible for reimbursing the Owner for any surveying costs incurred. Determination of flatwork flatness, surveying and any remedial work must be completed far enough in advance so that the project schedule is maintained, delays are avoided and the new flatwork or flatwork repairs are properly cured.

C. As directed by Architect, cut out and replace defective concrete. All defective concrete shall be removed from the site. No patching is to be done until surfaces have been examined by Architect and permission to begin patching has been provided.

D. Permission to patch any area shall not be considered waiver of right, by the Owner, to require removal of defective work, if patching does not, in opinion of Architect, satisfactorily restore quality and appearance of surface.

E. Defective concrete is:

1. Concrete that does not match the approved mix design for the given installation type.
2. Concrete not meeting specified 28-day strength.
3. Concrete which contains rock pockets, voids, spalls, transverse cracks, exposed reinforcing, or other such defects which adversely affect strength, durability or appearance.
4. Concrete which is incorrectly formed, out of alignment or not plumb or level.
5. Concrete containing embedded wood or debris.
6. Concrete having large or excessive patched voids which were not completed under Architect's direction.
7. Concrete not containing required embedded items.
8. Excessive Shrinkage, Traverse cracking, Crazing, Curling; or Defective Finish. Remove and replace if repair to an acceptable condition is not feasible.
9. Concrete that is unsuitable for placement or has set in truck drum for longer than 90 minutes from the time it was batched.
10. Expansion joint felt that is not isolating the full depth of the concrete section, and recessed as required for backer rod and sealant where required.
11. Concrete that is excessively wet or excessively dry and will not meet the minimum or maximum slump required per mix design.
12. Finished concrete with oil stains from equipment use, and or rust spots that cannot be removed.
13. Control joints (weakened planed joints) that do not meet the required minimum depth shown on the drawings.

F. Patching: Install specified Patching Mortar per manufacturer’s recommendations. REPAIRS TO DEFECTIVE CONCRETE WHICH AFFECT THE STRENGTH OF ANY STRUCTURAL CONCRETE MEMBER OR COMPONENT ARE SUBJECT TO APPROVAL BY THE ARCHITECT AND DSA.

3.12 CONCRETE TESTING

A. Comply with CBC Section 1903A, 1905A.3, 1916A and as specified in B. below. Costs of tests will be borne by the Owner.

B. Four identical cylinder samples for strength tests of each class of concrete placed each day shall be taken not less than once a day, or not less than once for each 50 cubic yards of concrete, or not less than once for each 2,000 square feet of surface area for

slabs or walls. In addition, samples for strength tests for each class of concrete shall be taken for seven-day tests at the beginning of the concrete work or whenever the mix or aggregate is changed.

C. Strength tests will be conducted by the Testing Lab on one cylinder at seven (7) days and two cylinders at twenty-eight (28) days. The fourth remaining cylinder will be available for testing at fifty-six (56) days if the 28-day cylinder test results do not meet the required design strength.

D. On a given project, if the total volume of concrete is such that the frequency of testing required by paragraph B. above would provide less than five strength tests for a given class of concrete, tests shall be made from at least five randomly selected batches or from each batch if fewer than five batches are used.

E. Cost of retests and coring due to low strength or defective concrete will be paid by Owner and back-charged to the Contractor.

F. Each truck shall be tested for slump before concrete is placed.

3.13 REMOVAL OF FORMS

A. Remove without damage to concrete surfaces.

B. Sequence and timing of form removal shall insure complete safety of concrete structure.

C. Concrete shall not be subjected to superimposed loads (structure or construction equipment) until it has attained its full design strength and not for a period of at least 21 days after placing. Concrete systems shall not be subjected to construction loads in excess of design loads.

3.14 SEALANT

A. Sealant Application: Apply sealant in compliance with manufacturer's application instructions, using hand guns or pressure equipment with proper nozzle size, on clean, dry, properly prepared substrates. Force sealants into joint against sides of joint to make uniform. Avoid pulling of the sealant from the sides. Fill sealant space completely with sealant. Finished joints shall be straight, uniform, smooth, and neatly finished. Remove any excess sealant from adjacent surfaces of joint utilizing the manufacturer's recommended solvent and cleaning processes. Leave the work in a neat, clean condition.

3.15 CLEANING

A. Upon completion of work of this Section promptly remove from the working area all scraps, debris and surplus material of this Section.

B. Clean excess material from surface of all concrete walks and utility structures.

C. Power wash all concrete surfaces to remove stains, dried mud, tire marks, and rust spots.

- END OF SECTION