PROJECT MANUAL
AND
PROJECT DOCUMENTS

FOR

Bid No. E04-23

Ventura High School Softball Site Improvements

MANDATORY JOB WALK DATE: September 24th, 2024, at 11 AM
JOB WALK SHALL START AT:
Ventura High School and 2 N Catalina St, Ventura, CA 93001

PREQUALIFICATION must be submitted by September 19th, 2024, through Quality Bidders

Last Day for RFI's September 25th, 2024, at 5 PM
RFI's to:

TO: Todd Jespersen, Architect, KBZ , toddj@kbzarch.com 805-690-3358
CC: Ryan Hughes, Bond Program Manager, ryan.hughes@venturausd.org 805-901-9620
Ray Richards, Bond Construction Manager, Ray.Richards@venturausd.org 805-342-6464
Anna Kohr, Balfour Beatty akohr@balfourbeattyus.com 805-393-8951

BID OPENING DATE:
October 11th, 2024, at 1 PM

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INSTRUCTIONS TO BIDDERS

1. Preparation of Bid Form. Proposals under these specifications shall be submitted on the blank forms furnished herewith at the time and place stated in the Notice Inviting Bids. All blanks in the bid form must be appropriately filled in, and all proposed prices must be stated clearly and legibly in both words and numerals. All bids must be signed by the bidder in permanent blue ink and submitted in sealed envelopes, bearing on the outside, the bidder's name, address, telephone number, and California Contractor's License number, and the name of the Project for which the bid is submitted. The District reserves the right to reject any bid if all of the above information is not furnished. It is each bidder's sole responsibility to ensure its bid is timely delivered and received at the location designated as specified above. Any bid received at the designated location after the scheduled closing time for receipt of bids shall be returned to the bidder unopened.

2. Bid Security. Each bid must be accompanied by one of the following forms of bidder's security: (1) cash; (2) a cashier's check made payable to the District; (3) a certified check made payable to the District; or (4) a bidder's bond executed by a California admitted surety as defined in Code of Civil Procedure section 995.120, made payable to the District, in the form set forth in the Contract Documents. Such bidder's security must be in an amount not less than ten percent (10%) of the maximum amount of such bidder's bid as a guarantee that the bidder will enter into the Contract, if the same is awarded to such bidder, and will provide the required Performance and Payment Bonds, insurance certificates and any other required documents. The Attorney-in-Fact (resident agent) who executes the Bid Bond on behalf of the surety company must attach a copy of its Power of Attorney as evidence of its authority. A notary shall acknowledge the power as of the date of execution of the surety bond which it covers. A Bid Bond will be accepted only if it is made out on either the Bid Bond form enclosed in these documents or on a form which conforms to it. In the event that a bidder is awarded the Contract and such bidder fails to enter into said Contract or provide the surety bond or bonds within ten (10) calendar days after award of the Contract to bidder, said security will be forfeited.

3. Signature. The bid form, all bonds, all designations of subcontractors, the Contractor's Certificate, the Agreement, and all Guarantees must be signed in permanent blue ink in the name of the bidder and must bear the signature in longhand of the person or persons duly authorized to sign the bid.

If bidder is a corporation, the legal name of the corporation shall first be set forth, together with two signatures: one from the President and one from the Secretary or Assistant Secretary. Alternatively, the signature of other authorized officers or agents may be affixed, if a certified copy of the resolution of the corporate board of directors authorizing them to do so is provided to the District. Such documents shall include the title of such signatories below the signature and shall bear the corporate seal.

If bidder is a partnership, the true name of the firm shall first be set forth, together with the names of all persons comprising the partnership or co-partnership. The bid must be signed by all partners comprising the partnership unless proof in the form of a certified copy of a statement of partnership acknowledging the signer to be a general partner is presented to the District, in which case the general partner may sign.

Bids submitted as joint ventures must so state and be signed by each joint venturer.

Bids submitted by individuals must be signed by the bidder unless an up to date power- of-attorney is on file in the District office, in which case, said person may sign for the individual.

The above rules also apply in the case of the use of a fictitious firm name. In addition, however, where a fictitious name is used, it must be so indicated in the signature.

4. Modifications. Changes in or additions to the bid form, recapitulations of the work bid upon, alternative proposals, or any other modification of the bid form which is not specifically called for in the Contract Documents may result in the District's rejection of the bid as not being responsive to the Notice Inviting Bids. **No oral or telephonic modification of any bid submitted will be considered**.

5. Erasures, Inconsistent or Illegible Bids. The bid submitted must not contain any erasures, interlineations, or other corrections unless each such correction creates no inconsistency and is suitably authenticated by affixing in the margin immediately opposite the correction the signature or signatures of the person or persons signing the bid. In the event of inconsistency between words and figures in the bid price, words shall control figures. In the event that the District determines that any bid is unintelligible, inconsistent, or ambiguous, the District may reject such bid as not being responsive to the Notice Inviting Bids.

6. Examination of Site and Contract Documents. Each bidder shall visit the site of the proposed work and become fully acquainted with the conditions relating to the construction and labor so that the facilities, difficulties, and restrictions attending the execution of the work under the Contract are fully understood. Bidders shall thoroughly examine and be familiar with the drawings and specifications and all others documents and requirements that are attached to and/or contained in the Project Manual or other documents issued to bidders. The failure or omission of any bidder to receive or examine any Contract Documents, form, instrument, addendum, or other document or to visit the site and become acquainted with conditions there existing shall not relieve any bidder from obligations with respect to the bid or to the contract. The submission of a bid shall be taken as prima facie evidence of compliance with this Section. Bidders shall not, at any time after submission of the bid, dispute, complain, or assert that there were any misunderstandings with regard to the nature or amount of work to be done.

7. Withdrawal of Bids. Any bid may be withdrawn, either personally or by written request, at any time prior to the scheduled closing time for receipt of bids. The bid security for bids withdrawn prior to the scheduled closing time for receipt of bids, in accordance with this paragraph, shall be returned upon demand therefor.

No bidder may withdraw any bid for a period of ninety (90) calendar days after the date set for the opening of bids.

8. Agreements, Insurance and Bonds. The Agreement form which the successful bidder, as Contractor, will be required to execute, and the forms and amounts of surety bonds and insurance endorsements which Contractor will be required to be furnished at the time of execution of the Agreement, are included in the bid documents and should be carefully examined by the bidder. The number of executed copies of the Agreement is two (2), the number of executed copies of the Performance Bond and Payment Bond required is one (1). Payment and Performance bonds must be executed by an admitted surety insurer as defined in Code of Civil Procedure 995.120. The Attorney-in-Fact (resident agent) who executes the Performance Bond and Payment Bond on behalf of the surety company must attach a copy of its Power of Attorney as evidence of its authority. A notary shall acknowledge the power as of the date of the execution of the surety bond which it covers. The successful bidder shall, upon award of the contract, obtain surety certification on both the Payment Bond and the Performance Bond by taking the completed bonds to the Ventura County Clerk Division of the County of Ventura, Lower Plaza, Administration Building, 800 S. Victoria Ave., Ventura, CA. The fee for each certification is $5.00.

9. Interpretation of Plans and Documents/Pre-Bid Clarification. If any prospective bidder is in doubt as to the true meaning of any part of the Contract Documents, or finds discrepancies in, or omissions, a written request for an interpretation or correction thereof may be submitted to the District. The bidder submitting the request shall be responsible for its prompt delivery. **Any interpretation or correction of the Contract Documents will only be made by Addendum duly issued, and a copy of such Addendum will be made available for each contractor receiving a set of the Contract Documents.** No person is authorized to make any oral interpretation of any provision in the Contract Documents, nor shall any oral interpretation be binding on the District. If discrepancies on drawings, specifications or elsewhere in the Contract Documents are not covered by addenda, bidder shall include in their bid methods of construction and materials for the higher quality and complete assembly. Each request for clarification shall be submitted in writing, via email, to only the following persons:

TO: Todd Jespersen, Architect, KBZ , toddj@kbzarch.com 805-690-3358
CC: Ryan Hughes, Bond Program Manager, ryan.hughes@venturausd.org 805-901-9620
Ray Richards, Bond Construction Manager, Ray.Richards@venturausd.org 805-342-6464
Anna Kohr, Balfour Beatty akohr@balfourbeattyus.com 805-393-8951

Each transmitted request shall contain the name of the person and/or firm filing the request, address, telephone, and fax number, Specifications and/or Drawing number. Bidder is responsible for the legibility of hand written requests. Pre-bid clarification request shall be filed a minimum of **seven (7)** days prior to bid opening. Requests received less than **seven (7)** days before bid opening shall not be considered or responded to. A written response to timely pre-bid clarifications requests which materially affects the bidders price will be made by Addendum issued by the District not less than seventy-two (72) hours prior to bid opening.

10. Bidders Interested in More Than One Bid. No person, firm, or corporation shall be allowed to make, or file, or be interested in more than one prime bid for the same work unless alternate bids are specifically called for. A person, firm, or corporation that has submitted a proposal to a bidder, or that has quoted prices of materials to a bidder, is not thereby disqualified from submitting a proposal or quoting prices to other bidders or making a prime proposal.

11. Award of Contract. The Contract will be awarded to the lowest responsive responsible bidder by action of the governing Board. The District reserves the right to reject any or all bids, or to waive any irregularities or informalities in any bids or in the bidding. In the event an award is made to bidder, and such bidder fails or refuses to execute the Contract and provide the required documents within ten (10) calendar days after award of the Contract to bidder, the District may award the Contract to the next lowest responsible and responsive bidder or release all bidders**. Each bid must conform and be responsive to the Contract Documents as defined in the General Conditions**.

12. Bid Protest Procedure. Any bidder may file a bid protest. The protest shall be filed in writing with the District's Director of Purchasing not less more than three (3) business days after the date of the bid opening. The protest must include the name, address, telephone number, and email address of the person representing the protesting party. An e-mail address shall be provided and by filing the protest, protesting bidder consents to receipt of e-mail notices for purposes of the protest and protest related questions and protest appeal, if applicable. The protest document must contain a complete statement of any and all bases for the protest, including without limitation all facts, supporting documentation, legal authorities and argument in support of the grounds for the bid protest; any matters not set forth in the written bid protest shall be deemed waived. All factual contentions must be supported by competent, admissible and creditable

evidence. The protest must refer to the specific portions of all documents which form the bases for the protest.

a. Resolution of Bid Controversy: Once the bid protest is received, the apparent lowest responsible bidder will be notified of the protest and the evidence presented. If appropriate, the apparent low bidder will be given an opportunity to rebut the evidence and present evidence that the apparent low bidder should be allowed to perform the Work. If deemed appropriate by the District, an informal hearing will be held. District will issue a written decision within thirty (30) calendar days of receipt of the protest, unless factors beyond the District's reasonable control prevent such resolution. The decision on the bid protest will be copied to all parties involved in the protest.

b. Appeal: If the protesting bidder or the apparent low bidder is not satisfied with the decision, the matter may be appealed to the Board of Education, or their designee, within three (3) business days after receipt of the District's written decision on the bid protest. The appeal must be in writing and sent via overnight registered mail with all accompanying information relied upon for the appeal and an e-mail address from which questions and responses may be provided to:

Ventura Unified School District
Board of Education, c/o Business Services Department
255 W. Stanley Avenue, Suite 100
Ventura, CA 93001

c. Appeal Review: The Board of Education shall review the decision on the bid protest from the Director of Purchasing and issue a written response to the appeal, or if appropriate, appoint a Hearing Officer to conduct a hearing and issue a written decision. The written decision of Board of Education or the Hearing Officer shall be rendered as soon as practicable given the meeting schedule of the Board, but in no case more than thirty (30) calendar days from the date the written appeal is received. The decision concerning the appeal will be final and not subject to any further appeals.

d. Reservation of Rights to Proceed with Project Pending Appeal. The District reserves the right to proceed to award the Project and commence construction pending an Appeal. If there is State Funding or a critical completion deadline, the District may choose to shorten the time limits set forth in this Section if written notice is provided to the protesting party. E-mailed notice with a written confirmation sent by First Class Mail shall be sufficient to constitute written notice. If there is no written response to a written notice shortening time, the District may proceed with the award.

e. Finality. Failure to comply with this Bid Protest Procedure shall constitute a waiver of the right to protest and shall constitute a failure to exhaust the protesting bidder's administrative remedies.

13. Alternates. If alternate bids are called for, the Contract may be awarded at the election of the Governing Board to the lowest responsible and responsive bidder using the method and procedures outlined in the Notice Inviting Bids and as specified in the section entitled Alternate/Deductive Bid Alternates.

a. Subcontractor Listing for Alternates. If alternate bids are called for and the bidder intends to use different or additional subcontractors, a separate list of subcontractors must be submitted for each such alternate.

14. Evidence of Responsibility. Upon the request of the District, a bidder whose bid is under consideration for the award of the Contract shall submit promptly to the District satisfactory evidence showing the bidder's financial resources, surety and insurance claims experience, construction experience,

completion ability, workload, organization available for the performance of the Contract, and other factors pertinent to a Project of the scope and complexity involved.

15. Listing Subcontractors. Each bidder shall submit with his bid, on the form furnished with the Contract Documents, a list of the names, license numbers, DIR registration numbers, email addresses and locations of the places of business of each subcontractor who will perform work or labor or render service to the bidder in or about the project, or a subcontractor who under subcontract to the bidder, specially fabricates and installs a portion of the work, in an amount in excess of one-half of 1 percent of the bidder's total bid as required by the Subletting and Subcontracting Fair Practices Act (Public Contract Code section 4100, et seq.).

16. Workers' Compensation. In accordance with the provisions of Labor Code section 3700, the successful bidder as the Contractor shall secure payment of compensation to all employees. The Contractor shall sign and file with the District the following certificate prior to performing the work under this contract: "I am aware of the provisions of Section 3700 of the Labor Code, which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract." The form of such certificate is included as a part of the Bid Documents.

17. Contractor's License. To perform the work required by this notice, the Contractor must possess the Contractor's License as specified in the Notice Inviting Bids, and the Contractor must maintain the license throughout the duration of the contract. If, at the time of award of the Contract, bidder is not licensed to perform the Project in accordance with Division 3, Chapter 9, of the Business and Professions Code for the State of California and the Notice to Contractors calling for bids, such bid will not be considered and the Contractor will forfeit its bid security to the District.

18. DIR Registration. To perform the work required by this notice, the Contractor, and all listed Subcontractors, must be registered with the Department of Industrial Relations (DIR), and must maintain current registration throughout the duration of the contract. If, at the time of award of the Contract, bidder is not registered with DIR in accordance with Labor Code section 1725.5, such bid will not be considered and the Contractor will forfeit its bid security to the District.

19. Anti-Discrimination. It is the policy of the District that in connection with all work performed under contracts, there be no discrimination against any prospective or active employee engaged in the work because of race, color, ancestry, national origin, religious creed, sex, age, or marital status. The Contractor agrees to comply with applicable federal and California laws, including, but not limited to, the California Fair Employment and Housing Act, beginning with Government Code section 12900 and Labor Code section 1735. In addition, the Contractor agrees to require like compliance by any subcontractors employed on the work by such Contractor.

20. Preference for Materials and Substitutions.

a. One Product Specified. Unless the Plans and Specifications state that no Substitution is permitted, whenever the Contract Documents indicate any specific article, device, equipment, product, material, fixture, patented process, form, method, construction, or any specific name, make, trade name, or catalog number, with or without the words, "or equal," such specification shall be read as if the language "or equal" is incorporated.

b. Request for Substitution. Bidder may, unless otherwise stated, offer any material, process, article, etc., which is materially equal or better in every respect to that so indicated or specified ("Specified Item") and will completely accomplish the purpose of the Contract Document. If bidder desires to offer a

Substitution for a Specified Item, such bidder must make a request in writing to the Architect. **Such request by bidder must be received by the Architect no later than ten (10) days prior to the bid opening date.** The request for substitution must be accompanied by evidence as to whether the proposed substitution:

1) Is equal in quality, service, and ability to the Specified Item as demonstrated by a side by side comparison of key characteristics and performance criteria (CSI comparison chart);
2) Will entail no changes in detail, construction and scheduling of related work;
3) Will be acceptable in consideration of the required design and artistic effect;
4) Will provide no cost disadvantage to the District;
5) Will require no excessive or more expensive maintenance, including adequacy and availability of replacement parts; and
6) Will require no change in the Contract Time.

Bidder shall provide with the request for substitution, any and all Drawings, Specifications, samples, performance data, calculations, and other information as may be required to assist the Architect and the District in determining whether the proposed substitution is acceptable. The burden of establishing these facts shall be upon the bidder.

After the District's receipt of such evidence by bidder, the District will make its final decision as to whether the bidder's request for Substitution for any Specified Items will be approved. The District shall have sole discretion in deciding as to whether a proposed request for Substitution is equal to or better than a Specified Item. Any request for Substitution which is approved by the District shall be documented and processed through an Addendum to the bid documents, published and distributed to all bidders no later than 72 hours prior to the bid due date and time.

21. Disqualification of Bidders and Proposals. More than one proposal for the same work from any individual, firm, partnership, corporation, or association under the same or different names will not be accepted; and reasonable grounds for believing that any bidder is interested in more than one proposal for the work will be cause for rejecting all proposals in which such bidder is interested and the bidder will forfeit their bid security to the District.

22. Unbalanced or Altered Bids. Proposals in which the prices are obviously unbalanced, and those which are incomplete or show any alteration of form, or contain any additions or conditional or alternate bids that are not called for or otherwise permitted, may be rejected. A proposal on which the signature of the bidder has been omitted may be rejected. If, in the District's sole discretion, it determines any pricing, costs or other information submitted by a bidder may result in an unbalanced bid, the District may deem such bid non-responsive. A bid may be determined by the District to be unbalanced if the bid is based on prices significantly less than cost for some work and prices which are significantly overstated in relation to cost for other work, and if there is a reasonable doubt that the bid will result in the lowest overall cost to the District even though it may be the low evaluated bid, or if it is so unbalanced as to be tantamount to allowing an advanced payment.

23. Employment of Apprentices. The Contractor and all Subcontractors shall comply with the provisions of California Labor Code including, but not limited to sections 1777.5, 1777.6, and 1777.7 concerning the employment of apprentices. The Contractor and any Subcontractor under him shall comply with the requirements of said sections, including applicable portions of all subsequent amendments in the employment of apprentices; however, the Contractor shall have full responsibility for compliance with said Labor Code sections, for all apprenticeable occupations, regardless of any other contractual or employment relationships alleged to exist.

24. Non-Collusion Declaration. Public Contract Code section 7106 requires bidders to submit declaration of non-collusion with their bids. This form is included with the bid documents and must be signed and dated by the bidder under penalty of perjury.

25. Wage Rates, Travel and Subsistence.

a. The Contractor and all subcontractors shall comply with the requirements set forth in Division 2, Part 7, Chapter 1 of the Labor Code. Pursuant to Labor Code section 1770 et seq., the District has obtained from the Director of the Department of Industrial Relations the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work in the locality in which this work is to be performed for each craft, classification or type of worker needed to execute the contract. Copies are available from the District to any interested party on request and are also available from the Director of the Department of Industrial Relations. The Contractor shall obtain copies of the above-referenced prevailing wage sheets and post a copy of such wage rates at appropriate, conspicuous, weatherproof points at the Site.

b. Any worker employed to perform work on the Project and such work is not covered by any classification listed in the published general prevailing wage rate determinations or per diem wages determined by the Director of the Department of Industrial Relations, shall be paid not less than the minimum rate of wages specified therein for the classification which most nearly corresponds to the employment of such person in such classification.

c. Holiday and overtime work, when permitted by law, shall be paid for at the rate set forth in the prevailing wage rate determinations issued by the Director of the Department of Industrial Relations or at least one and one-half (1½) times the specified basic rate of per diem wages, plus employer payments, unless otherwise specified in the Contract Documents or authorized by law.

d. These per diem rates, including holiday and overtime work, and employer payments for health and welfare, pension, vacation, and similar purposes, are on file at the administrative office of the District, located as noted above and are also available from the Director of the Department of Industrial Relations. It is the Contractor's responsibility to ensure the appropriate prevailing rates of per diem wages are paid for each classification. It shall be mandatory upon the Contractor to whom the Contract is awarded, and upon any subcontractor under such Contractor, to pay not less than the said specified rates to all workers employed by them in the execution of the Contract.

26. No Telephone or Facsimile Availability. No telephone or facsimile machine will be available to bidders on the District premises at any time.

27. Obtaining Bidding Documents. The Bid & Contract Documents are available on the Secure Bids Portal which can be accessed from the District Website under Current Bids & Proposals at: https://www.venturausd.org/services/business-services/purchasing.

28. Bid Proposal Submittal. Bid Proposals shall be submitted electronically via the District's Secure Bids vendor portal before the latest date/time for submitting Bid Proposals. See Call for Bids for link to the District's Secure Bids vendor portal. Bidders are solely responsible for timely submission of Bid Proposals through the District's Secure Bids vendor portal. Bidders must attach a pdf file(s) to the electronic bid submission containing all the completed and executed Bid Documents. Bidders experiencing any technical difficulties with the bid submission process may contact the Secure Bids Technical Support at sbsupport@colbitech.com. The District does not guarantee timely availability of assistance, or assurance that any given problem will be resolved by the latest date and/or time for submitting Bid Proposals.

29. Date and Time of Bid Proposal Submittal. The Secure Bids clock is controlling and determinative as to the time of the Bidder's submittal of the Bid Proposal. The foregoing notwithstanding, whether or not Bid Proposals are opened exactly at the time fixed in the Call for Bids, no Bid Proposals shall be received or considered by the District after. Bid Proposals submitted after such time are nonresponsive. Bid results after the deadline for submitting Bid Proposals on the District's Secure Bids vendor portal.

30. Bidder shall utilize a complete set of Bidding Documents in preparing a bid. The failure or omission of bidder to receive any Bidding Document, form, instrument, Addendum, or other document shall not relieve bidder from any obligations with respect to the bid and/or Contract.

31. Addenda. Clarification or any other notice of a change in the Bidding Documents will be issued only by the District and only in the form of a written Addendum, transmitted by fax, e-mail, or available for pick up to all who are known by the issuing office to have received a complete set of Bidding Documents. Any other purported Addenda are void and unenforceable.

Bidder is responsible for ascertaining the disposition of all Addenda issued regardless of District notification and to acknowledge all Addenda in the submitted sealed bid prior to the bid opening. Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for inspection. Each Addendum will be numbered, dated, and identified with the Project number. Oral statements or any instructions in any form, other than Addendum as described above, shall be void and unenforceable. Addenda issued by the District and not noted as being acknowledged by bidder as required in the Bid Form, may result in the bid being deemed non-responsive.

32. Time of Completion. The time of completion of the work to be performed under this Contract is of the essence to this Contract. Delays and extensions of time may be allowed in accordance with the provisions of the General Conditions. All work under this Contract shall commence on the date stated in the District's notice to the Contractor to proceed and shall be completed per the Special Conditions, Liquidated Damages and Extensions of Time.

33. Fingerprinting. Contractor is hereby made aware of the requirements of Education code section 45125.1 which requires employees of any entity that has a contract with a school district to have certain employees who will have contact with students to be fingerprinted pursuant to that law, and to not allow such employees to work around students until such time as the Department of Justice has cleared the employee to do so. If it becomes necessary for Contractor's employees to work around students, Contractor shall certify in writing that it has complied with section 45125.1 and shall inform all subcontractors who must work around students of the requirements of that law, further requiring subcontractors to certify compliance with the law.

34. Debarment. Bidder may also be subject to debarment, in addition to seeking remedies for False Claims under Government Code section 12650 et seq. and Penal Code section 72, the District may debar a Contractor pursuant to Article 15 of the General Conditions if the Board, or the Board may designate a hearing officer who, in his or her discretion, finds the Contractor has done any of the following:

a. Intentionally or with reckless disregard, violated any term of a contract with the District

b. Committed an act or omission which reflects on the Contractor's quality, fitness or capacity to perform work for the District;

c. Committed an act or offense which indicates a lack of business integrity or business honesty; or,

d. Made or submitted a false claim against the District or any other public entity (See Government Code section 12650, et seq., and Penal Code section 72)

CHECKLIST OF MANDATORY BID FORMS

(For Contractor's use and reference only. Additional documents may be required so bidders should carefully review all Contract Documents and Bid Documents)

- ☐ Designation of Subcontractors
- ☐ Bid Form acknowledging all Addenda
- ☐ Contractor's Certificate Regarding Workers Compensation
- ☐ Non-Collusion Declaration
- ☐ Bid Bond (or Bid Guarantee form if Security is other than Bid Bond)
- ☐ Acknowledgment of Bidding Practices Regarding Indemnity
- ☐ Contractor's Certificate Regarding Drug-Free Work Place
- ☐ Contractor's Certificate Regarding Alcoholic Beverage and Tobacco-Free Campus Policy
- ☐ Contractor's Certificate Regarding Prevailing Wage
- ☐ Contractor Certification of Financial Relationships in Regard to Roofing Project (NOT APPLICABLE)
- ☐ Disabled Veteran Business Enterprise (DVBE) Participation Statement At Time Of Bid

DESIGNATION OF SUBCONTRACTORS

In compliance with the Subletting and Subcontracting Fair Practices Act (California Public Contract Code section 4100 et seq.,) and any amendments thereof, each Bidder shall set forth below: (a) the name, license number, and location of the place of business of each subcontractor who will perform work or labor or render service to the Contractor, who will perform work or labor or work or improvement to be performed under this Contract, or a subcontractor licensed by the State of California who, under subcontract to the Contractor, specially fabricates and installs a portion of the work or improvements according to detailed Drawings contained in the Plans and Specifications in an amount in excess of one-half of one percent of the Contractor's total bid; and (b) the portion and description of the work which will be done by each subcontractor under this Act. The Contractor shall list only one subcontractor for each such portion as is defined by the Contractor in this bid. All subcontractors shall be properly licensed by the California State Licensing Board.

If a Contractor fails to specify a subcontractor, or if a Contractor specifies more than one subcontractor for the same portion of work to be performed under the Contract in excess of one-half of one percent of the Contractor's total bid, the Contractor shall be deemed to have agreed that the Contractor is fully qualified to perform that portion, and that the Contractor alone shall perform that portion.

No Contractor whose bid is accepted shall (a) substitute any subcontractor, (b) permit any subcontractor to be voluntarily assigned or transferred or allow the relevant portion of the work to be performed by anyone other than the original subcontractor listed in the original bid, or (c) sublet or subcontract any portion of the work in excess of one-half of one percent of the Contractor's total bid where the original bid did not designate a subcontractor, except as authorized in the Subletting and Subcontracting Fair Practices Act.

Subletting or subcontracting of any portion of the work in excess of one-half of one percent of the Contractor's total bid where no subcontractor was designated in the original bid shall only be permitted in cases of public emergency or necessity, and then only after a finding, reduced to writing as a public record, of the authority awarding this Contract setting forth the facts constituting the emergency or necessity.

NOTE: If alternate bids are called for and bidder intends to use different or additional subcontractors on the alternates, a separate list of subcontractors must be provided for each such Alternate.

No contractor or subcontractor may be listed on a bid proposal for a public works project, or may be awarded a contract for public work, unless registered with the Department of Industrial Relations (DIR) pursuant to Labor Code section 1725.5. All public works projects are subject to compliance monitoring and enforcement by the DIR.

Contractors and subcontractors on public works projects are required to submit certified payroll records (CPRs) to the Labor Commissioner using DIR's electronic certified payroll reporting system.

DESIGNATION OF SUBCONTRACTORS FORM

Description AND Portion of Work	Name of Subcontractor	Location & Place of Business	E-Mail	Phone Number	License Type AND License Number	DIR Registration Number

Proper Name of Bidder: _____

Date: _____

Name: _____

Signature of Bidder Representative: _____

Address: _____

Phone: _____

BID FORM

BID: **E04-23 Ventura High School Softball Site Improvements**

BIDS TO OPEN VIA SECURE BIDS: October 11th, 2024, at 1 PM

Board of Education
Purchasing Department, 2nd Floor
VENTURA UNIFIED SCHOOL DISTRICT
255 W. Stanley Avenue, Suite 100
Ventura, California 93001

TO: Ventura Unified School District, acting by and through its Governing Board, herein called "District".

1. Pursuant to and in compliance with your Notice Inviting Bids and other documents relating thereto, the undersigned bidder, having familiarized himself with the terms of the Contract, the local conditions affecting the performance of the Contract, the cost of the work at the place where the work is to be done, with the Drawings and Specifications, and other Contract Documents, hereby proposes and agrees to perform within the time stipulated, the Contract, including all of its component parts, and everything required to be performed, including its acceptance by the District, and to provide and furnish any and all labor, materials, tools, expendable equipment, and utility and transportation services necessary to perform the Contract and complete all of the Work in a workmanlike manner required in connection with the construction of:

E04-23 Ventura High School Softball Site Improvements

in the District described above, all in strict conformance with the drawings and other Contract Documents on file at the Purchasing Office of said District for amounts set forth herein.

2. BIDDER ACKNOWLEDGES THE FOLLOWING ADDENDUM:

Number	Number	Number	Number	Number	Number	Number	Number
_____	_____	_____	_____	_____	_____	_____	_____

Acknowledge the inclusion of all addenda issued prior to bid in the blanks provided above. Your failure to do so may render your bid non-responsive.

3. **TOTAL BASE BID** CASH PURCHASE PRICE IN WORDS & NUMBERS:

E04-23 Ventura High School Softball Site Improvements

_____ DOLLARS ($ _____)

ALTERNATE No 1: NA

_____ DOLLARS ($ _____)

4. TIME FOR COMPLETION: The District may give a notice to proceed within ninety (90) days of the award of the bid by the District. Once the Contractor has received the notice to proceed, the Contractor shall complete the work in the time specified in the Agreement. By submitting this bid, Contractor has thoroughly studied this Project and agrees that the Contract Time for this Project is adequate for the timely and proper completion of the Project. Further, Contractor has included in the analysis of the time required for this Project, Rain Days, Governmental Delays, and the requisite time to complete Punch List.

In the event that the District desires to postpone giving the notice to proceed beyond this ninety (90) day period, it is expressly understood that with reasonable notice to the Contractor, giving the notice to proceed may be postponed by the District. It is further expressly understood by the Contractor, that the Contractor shall not be entitled to any claim of additional compensation as a result of the postponement of giving the notice to proceed.

If the Contractor believes that a postponement will cause a hardship to it, the Contractor may terminate the contract with written notice to the District within ten (10) days after receipt by the Contractor of the District's notice of postponement. Should the Contractor terminate the Contract as a result of a notice of postponement, the District shall have the authority to award the Contract to the next lowest responsible bidder, if applicable.

It is understood that the District reserves the right to reject any or all bids and/or waive any irregularities or informalities in this bid or in the bid process. The Contractor understands that it may not withdraw this bid for a period of ninety (90) days after the date set for the opening of bids.

5. Attached is bid security in the amount of not less than ten percent (10%) of the bid:

Bid bond (10% of the Bid), certified check, or cashier's check (circle one)

6. The required List of Designated Subcontractors is attached hereto.

7. The required Non-Collusion Declaration is attached hereto.

8. It is understood and agreed that if written notice of the acceptance of this bid is mailed, telegraphed, or delivered to the undersigned after the opening of the bid, and within the time this bid is required to remain open, or at any time thereafter before this bid is withdrawn, the undersigned will execute and deliver to the District a Contract in the form attached hereto in accordance with the bid as accepted, and that he or she will also furnish and deliver to the District the Performance Bond and Payment Bond, all within ten (10) calendar days after award of Contract, and that the work under the Contract shall be commenced by the undersigned bidder, if awarded the Contract, by the start date provided in the District's Notice to Proceed, and shall be completed by the Contractor in the time specified in the Contract Documents.

9. The District may award a contract to separate contractors on an individual project or combination of projects, whichever is to the best interest of the District. The bidder may specify that the District acceptance of one project shall be contingent upon the District's acceptance of one or more additional

projects submitted on the same bid. It may be necessary to delete portions of the bid award depending on the availability of District funds.

10. The names of all persons interested in the foregoing proposal as principals are as follows:

_____

_____

_____

_____

_____

(IMPORTANT NOTICE: If bidder or other interested person is a corporation, state the legal name of such corporation, as well as the names of the president, secretary, treasurer, and manager thereof; if a co-partnership, state the true names of the firm, as well as the names of all individual co-partners comprising the firm; if bidder or other interested person is an individual, state the first and last names in full.)

11. PROTEST PROCEDURES. If there is a bid protest, the grounds shall be submitted as set forth in the Instructions to Bidders.

12. The undersigned bidder shall be licensed and shall provide the following California Contractor's license and Department of Industrial Relations (DIR) registration information:

License Number: _____

License expiration date: _____

Name on License: _____

Class of License: _____

DIR Registration Number: _____

If the bidder is a joint venture, each member of the joint venture must include the above information.

13. Time is of the essence regarding this Contract, therefore, in the event the bidder to whom the Contract is awarded fails or refuses to post the required bonds and return executed copies of the Agreement form within ten (10) calendar days from the date of receiving the Notice of Award, the District may declare the bidder's bid deposit or bond forfeited as damages.

14. The bidder declares that he/she has carefully examined the location of the proposed Project, that he/she has examined the Contract Documents, including the Plans, General Conditions, Supplemental Conditions, Addenda, and Specifications, all others documents and requirements that are attached to and/or contained in the Project Manual, all other documents issued to bidders and read the accompanying instructions to bidders, and hereby proposes and agrees, if this proposal is accepted, to furnish all materials and do all work required to complete the said work in accordance with the Contract Documents, in the time and manner therein prescribed for the unit cost and lump sum amounts set forth in this Bid Form.

I agree to receive service of notices at the e-mail address listed below.

I the below-indicated bidder, declare under penalty of perjury that the information provided and representations made in this bid are true and correct.

_____
Proper Name of Company

_____
Name of Bidder Representative

_____
Street Address

_____
City, State, and Zip

(_____) _____
Phone Number

(_____) _____
Fax Number

_____
E-Mail

By: _____ Date: _____
Signature of Bidder Representative

NOTE: If bidder is a corporation, the legal name of the corporation shall be set forth above together with the signature of authorized officers or agents and the document shall bear the corporate seal; if bidder is a partnership, the true name of the firm shall be set forth above, together with the signature of the partner or partners authorized to sign contracts on behalf of the partnership; and if bidder is an individual, his signature shall be placed above.

All signatures must be made in permanent blue ink.

CONTRACTOR'S CERTIFICATE REGARDING WORKERS' COMPENSATION

Labor Code section 3700 in relevant part provides:

Every employer except the State shall secure the payment of compensation in one or more of the following ways:

1. By being insured against liability to pay compensation by one or more insurers duly authorized to write compensation insurance in this State.

2. By securing from the Director of Industrial Relations a certificate of consent to self-insure, which may be given upon furnishing proof satisfactory to the Director of Industrial Relations of ability to self-insure and to pay any compensation that may become due to employees.

3. For any county, city, city and county, municipal corporation, public district, public agency, or any political subdivision of the state, including each member of a pooling arrangement under a joint exercise of powers agreement (but not the state itself), by securing from the Director of Industrial Relations a certificate of consent to self-insure against workers' compensation claims, which certificate may be given upon furnishing proof satisfactory to the director of ability to administer workers' compensation claims properly, and to pay workers' compensation claims that may become due to its employees. On or before March 31, 1979, a political subdivision of the state which, on December 31, 1978, was uninsured for its liability to pay compensation, shall file a properly completed and executed application for a certificate of consent to self-insure against workers' compensation claims. The certificate shall be issued and be subject to the provisions of Section 3702.

I am aware of the provisions of Labor Code section 3700 which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provision before commencing the performance of the work of this Contract.

_____

(Signature)

_____

(Print)

_____

(Date)

In accordance with Article 5 (commencing at section 1860), Chapter 1, Part 7, Division 2 of the Labor Code, the above certificate must be signed and submitted with the Contractor's bid.

NON-COLLUSION DECLARATION

The undersigned declares:

I am the _____ [Title] of _____ [Name of Company], the party making the foregoing bid.

The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or to refrain from bidding. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder. All statements contained in the bid are true. The bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _____ [Date], at _____ [City], _____ [State].

Signed: _____

Typed Name: _____

BID GUARANTEE FORM

(Use only when not using a Bid Bond)

Accompanying this proposal is a cashier's check payable to the order of the Ventura Unified School District or a certified check payable to the order of the Ventura Unified School District in an amount equal to ten percent (10%) of the base bid and alternates ($_____).

The proceeds of this check shall become the property of said District, if, this proposal shall be accepted by the District through the District's Governing Board, and the undersigned fails to execute a Contract with and furnish the sureties required by the District within the required time; otherwise, said check is to be returned to the undersigned.

_____

Bidder

Note: Use this form, in lieu of Bid Bond form, when a cashier's check or certified check is accompanying the bid

BID BOND FORM

KNOW ALL MEN BY THESE PRESENT that we, the undersigned, (hereafter called "Principal"), and _____ (hereafter called "Surety"), are hereby held and firmly bound unto the Ventura Unified School District (hereafter called "District") in the sum of _____ ($_____) for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors, and assigns.

SIGNED this _____ day of _____, 20___.

The condition of the above obligation is such that whereas the Principal has submitted to the District a certain Bid, attached hereto and hereby made a part hereof, to enter into a Contract in writing for the construction of _____.

NOW, THEREFORE,

a. If said Bid is rejected, or

b. If said Bid is accepted and the Principal executes and delivers a Contract or the attached Agreement form within ten (10) calendar days after acceptance (properly completed in accordance with said Bid), and furnishes bonds for his faithful performance of said Contract and for payment of all persons performing labor or furnishing materials in connection therewith,

Then this obligation shall be void; otherwise, the same shall remain in force and effect.

Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the Contract, or the call for bids, or the work to be performed thereunder, or the specifications accompanying the same, shall in anyway affect its obligation under this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of said Contract, or the call for bids, or the work, or to the specifications.

In the event suit is brought upon this bond by the District and judgment is recovered, the Surety shall pay all costs incurred by the District in such suit, including without limitation, attorneys' fees to be fixed by the court.

IN WITNESS WHEREOF, Principal and Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, on the day and year first set forth above.

(Corporate Seal)

By _____
Principal's Signature

_____
Typed or Printed Name

_____
Principal's Title

(Corporate Seal)

By _____
Surety's Signature

_____
Typed or Printed Name

_____
Title

(Attached Attorney in Fact Certificate)

_____
Surety's Name

_____
Surety's Address

_____
Surety's Phone Number

(This bond must be signed and acknowledged by both Principal and Surety before a Notary Public, and acknowledgments, with Notarial Seals and Attorney-in-Fact Certificates, attached hereto.)

IMPORTANT:

Surety companies executing bonds must possess a certificate of authority from the California Insurance Commissioner authorizing them to write surety insurance defined in California Insurance Code section 105, and if the work or project is financed, in whole or in part, with federal, grant, or loan funds, it must also appear on the Treasury Department's most current list (Circular 570 as amended).

THIS IS A REQUIRED FORM.

Any claims under this bond may be addressed to:

(Name and Address of Surety)

_____

_____

_____

(Name and Address of agent or representative for
service of process in California if different from above)

_____

_____

_____

(Telephone Number of Surety and agent or
representative for service of process in California).

_____

_____

_____

ACKNOWLEDGMENT OF BIDDING PRACTICES REGARDING INDEMNITY FORM

TO: Ventura Unified School District

RE: Project Number _____

Construction Contract for _____

Please be advised that with respect to the above-referenced Project the undersigned Contractor on behalf of itself and all subcontractors hereby waives the benefits and protection of Labor Code section 3864, which provides:

"If an action as provided in this chapter is prosecuted by the employee, the employer, or both jointly against the third person results in judgment against such third person, the employer shall have no liability to reimburse or hold such third person harmless on such judgment or settlement in the absence of a written agreement to do so executed prior to the injury."

This Agreement has been signed by an authorized representative of the contracting party and shall be binding upon its successors and assignees. The undersigned further agrees to promptly notify the District of any changes of ownership of the contracting party or any subcontractor while this Agreement is in force.

_____
Contracting Party

_____
Name of Agent/Title

DATE:_____ _____
CONTRACTOR

By:_____
Signature

CONTRACTOR'S CERTIFICATE REGARDING DRUG-FREE WORKPLACE

This Drug-Free Workplace Certification form is required from all successful bidders pursuant to the requirements mandated by Government Code section 8350 et seq., the Drug-Free Workplace Act of 1990. The Drug-Free Workplace Act of 1990 requires that every person or organization awarded a contract or grant for the procurement of any property or service from any State agency must certify that it will provide a drug-free workplace by performing certain specified acts. In addition, the Act provides that each contract or grant awarded by a State agency may be subject to suspension of payments or termination of the contract or grant, and the Contractor or grantee may be subject to debarment from future contracting, if the contracting agency determines that specified acts have occurred.

Pursuant to Government Code section 8355, every person or organization awarded a contract or grant from a State agency shall certify that it will provide a drug-free workplace by doing all of the following:

1. Publishing a statement, notifying employees that the unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited in the person's or organization's workplace, and specifying actions which will be taken against employees for violations of the prohibition.

2. Establishing a drug-free awareness program to inform employees about all of the following:

   a. The dangers of drug abuse in the workplace;
   b. The person's or organization's policy of maintaining a drug-free workplace;
   c. The availability of drug counseling, rehabilitation and employee-assistance programs; and
   d. The penalties that may be imposed upon employees for drug abuse violations;

3. Requiring that each employee engaged in the performance of the contract or grant be given a copy of the statement required by subdivision (a) and that, as a condition of employment on the contract or grant, the employee agrees to abide by the terms of the statement.

I, the undersigned, agree to fulfill the terms and requirements of Government Code section 8355 listed above and will (a) publish a statement notifying employees concerning the prohibition of controlled substance at the workplace, (b) establish a drug-free awareness program, and (c) require each employee engaged in the performance of the contact be given a copy of the statement required by section 8355(a) and require such employee agree to abide by the terms of that statement.

I also understand that if the Ventura Unified School District determines that I have either (a) made a false certification herein, or (b) violated this certification by failing to carry out the requirements of Section 8355, that the contract awarded herein is subject to termination, suspension of payments, or both. I further understand that, should I violate the terms of the Drug-Free Workplace Act of 1990, I may be subject to debarment in accordance with the requirements of Section 8350 et seq.

I acknowledge that I am aware of the provisions of Government Code section 8350 et seq. and hereby certify that I will adhere to the requirements of the Drug-Free Workplace Act of 1990.

DATE:_____ _____
CONTRACTOR

By:_____
Signature

CONTRACTOR'S CERTIFICATE REGARDING ALCOHOLIC BEVERAGE AND TOBACCO-FREE CAMPUS POLICY

The Contractor agrees that it will abide by and implement the District's Alcoholic Beverage and Tobacco-Free Campus Policy, which prohibits the use of alcoholic beverages and tobacco products, of any kind and at any time, on District-owned or leased buildings, on DISTRICT property and in DISTRICT vehicles. The Contractor shall procure signs stating "ALCOHOLIC BEVERAGE AND TOBACCO USE IS PROHIBITED" and shall ensure that these signs are prominently displayed in all construction zones at all times.

DATE:_____

_____
CONTRACTOR

By:_____
Signature

CONTRACTOR'S CERTIFICATE REGARDING PREVAILING WAGE

I certify that I am aware of the provisions of Section 1770 et. seq. of the Labor Code of the State of California which require the payment of prevailing wages to all workers employed on a public works project, and that I will comply with such provisions upon commencement and throughout the performance of the work of this Contract.

DATE:_____

_____
CONTRACTOR

By:_____
Signature

DISABLED VETERAN BUSINESS ENTERPRISE (DVBE) PARTICIPATION STATEMENT AT TIME OF BID

Each bidder must complete this form in order to comply with the Ventura Unified School District ("District") policy for participation of disabled veteran business enterprises (School District projects funded in whole or in part by the State of California pursuant to the Leroy F. Greene School Facilities Act of 1998. (Education Code §17070.10, *et seq*.)

Project Name: _____

Bid No.: _____

The undersigned, on behalf of the Contractor named below, certifies that the Contractor has made reasonable efforts to secure participation by DVBE in the Contract to be awarded for the above-referenced Bid No., including participation by DVBE subcontractors and/or material suppliers.

Check only one of the following:

☐ The Contractor was unable after reasonable efforts to secure DVBE participation in the Contract for the above-referenced Project/Bid No. However, the Contractor will use DVBE services if the opportunity arises at any time during construction of the Project. Upon completion of the Project, the Contractor will report to the District the total dollar amount of DVBE participation in any Contract awarded to Contractor, and in any Change Order/ Construction Change Document, for the above-referenced Project.

☐ The Contractor has secured DVBE participation in the Contract for the above referenced Project/Bid No., and anticipates that such DVBE participation will equal approximately _____dollars ($_____), which represents approximately _____percent (___%) of the total Contract for such Project. Upon completion of the Project, Contractor will report to the District the actual total dollar amount of DVBE participation in the Contract awarded to Contractor, and in any Change Order/ Construction Change Document, for such Project

Company: _____

Name: _____

Title: _____

Signature: _____

Date: _____

[End of Bid Documents to be Submitted with Bid]

CONSTRUCTION AGREEMENT FORM

THIS AGREEMENT, entered into this____ day of_____, 20__ in the County of Ventura of the State of California, by and between the Ventura Unified School District, hereinafter called the "District", and _____, hereinafter called the "Contractor".

WITNESSETH that the District and the Contractor for the consideration stated herein agree as follows:

ARTICLE 1 - SCOPE OF WORK: The Contractor shall furnish all labor, materials, equipment, tools, and utility and transportation services, and perform and complete all work required in connection with **E04-23 Ventura High School Softball Site Improvements**("Project") in strict accordance with the Contract Documents enumerated in Article 7 below. The Contractor shall be liable to the District for any damages arising as a result of a failure to comply with that obligation, and the Contractor shall not be excused with respect to any failure to so comply by an act or omission of the Architect, Engineer, Inspector, Division of the State Architect (DSA), or representative of any of them, unless such act or omission actually prevents the Contractor from fully complying with the Contract Documents and the Contractor protests, in accordance with the Contract Documents, that the act or omission is preventing the Contractor from fully complying with the Contract Documents. Such protest shall not be effective unless reduced to writing and filed with the District office within seven (7) days of the date of occurrence of such act or omission preventing the Contractor from fully complying with the Contract Documents.

ARTICLE 2 - TIME OF COMPLETION: The District may give notice to proceed within ninety (90) days of the award of the bid by the District. Once the Contractor has received a notice to proceed, the Contractor shall reach Substantial Completion (See Article 1.1.46) of the Work within ninety-six (96) calendar days from receipt of the Notice to Proceed. This shall be called Contract Time. (See Article 8.1.1). It is expressly understood that time is of the essence.

Contractor has thoroughly studied the Project and has satisfied itself that the time period for this Project was adequate for the timely and proper completion of the Project within each milestone and within the Contract time. Further, Contractor has included in the analysis of the time required for this Project, items set forth in General Conditions Article 8.3.2.1, Submittal Schedules, Rain Day Float, and Governmental Delay Float.

In the event that the District desires to postpone giving the notice to proceed beyond this ninety (90) day period, it is expressly understood that with reasonable notice to the Contractor, giving the notice to proceed may be postponed by the District. It is further expressly understood by the Contractor, that the Contractor shall not be entitled to any claim of additional compensation as a result of the District's postponement of giving the notice to proceed.

If the Contractor believes that a postponement will cause hardship to it, the Contractor may terminate the Contract with written notice to the District within ten (10) days after receipt by the Contractor of the District's notice of postponement. It is further understood by the Contractor that in the event that the Contractor terminates the Contract as a result of postponement by the District, the District shall only be obligated to pay the Contractor for the work performed by the Contractor at the time of notification of postponement. Should the Contractor terminate the Contract as a result of a notice of postponement, the District shall have the authority to award the Contract to the next lowest responsible bidder.

ARTICLE 3 - LIQUIDATED DAMAGES: It being impracticable and infeasible to determine the amount of actual damage, it is agreed that the Contractor will pay the District the sum of **Five Hundred Dollars ($500.00)** per calendar day for each and every day of delay beyond the Contract Time set forth in Article 2 of this Agreement (inclusive of Milestones that are critical on the critical path or noted as critical to the District) as liquidated damages and not as a penalty or forfeiture. In the event Liquidated Damages are not paid, the Contractor further agrees that the District may deduct such amount thereof from any money due or that may become due the Contractor under the Contract (See Article 9.6 and 2.2 of the General Conditions). This Article shall not be construed as preventing the District from the recovery of damages (actual or other) under the Contract Documents.

ARTICLE 4 - CONTRACT PRICE: The District shall pay to the Contractor as full consideration for the faithful performance of the Contract, subject to any additions or deductions as provided in the Contract Documents, the sum of _____ DOLLARS ($_____), said sum being the total amount stipulated in the Bid Contractor submitted. Payment shall be made as set forth in the General Conditions.

Should any Change Order result in an increase in the Contract Price, the cost of such Change Order shall be agreed to in advance by the Contractor and the District, subject to the monetary limitations set forth in Public Contract Code section 20118.4. In the event that the Contractor proceeds with a Change in work without an agreement between the District and Contractor regarding the cost of a Change Order, the Contractor waives any Claim of additional compensation for such additional work.

ARTICLE 5 - HOLD HARMLESS AGREEMENT: Contractor shall defend, indemnify and hold harmless District, Architect, Inspector, the State of California and their officers, employees, agents and independent contractors from all liabilities, claims, actions, liens, judgments, demands, damages, losses, costs or expenses of any kind arising from death, personal injury, property damage or other cause based or asserted upon any act, omission, or breach connected with or arising from the progress of Work or performance of service under this Agreement or the Contract Documents. As part of this indemnity, Contractor shall protect and defend, at its own expense, District, Architect, Construction Manager, Inspector, the State of California and their officers, employees, agents and independent contractors from any legal action including attorney's fees or other proceeding based upon such act, omission, breach or as otherwise required by this Article.

Furthermore, Contractor agrees to and does hereby defend, indemnify and hold harmless District, Architect, Construction Manager, Inspector, the State of California and their officers, employees, agents and independent contractors from every claim or demand made, and every liability, loss, damage, expense or attorney's fees of any nature whatsoever, which may be incurred by reason of:

(a) Liability for (1) death or bodily injury to persons; (2) damage or injury to, loss (including theft), or loss of use of, any property; (3) any failure or alleged failure to comply with any provision of law or the Contract Documents; or (4) any other loss, damage or expense, sustained by any person, firm or corporation or in connection with the Work called for in this Agreement or the Contract Documents, except for liability resulting from the sole or active negligence, or the willful misconduct of the District.

(b) Any bodily injury to or death of persons or damage to property caused by any act, omission or breach of Contractor or any person, firm or corporation employed by Contractor, either directly or by independent contract, including all damages or injury to or death of persons, loss (including theft) or loss of use of any property, sustained by any person, firm or corporation, including the District, arising out of or in any way connected with Work covered by this Agreement or the Contract Documents, whether said injury or damage occurs either on or off District property, but not for any loss, injury, death or damages caused by the sole or active negligence or willful misconduct of the District.

(c) Any dispute between Contractor and Contractor's subcontractors/supplies/ Sureties, including, but not limited to, any failure or alleged failure of the Contractor (or any person hired or employed directly or indirectly by the Contractor) to pay any Subcontractor or Materialman of any tier or any other person employed in connection with the Work and/or filing of any stop notice or mechanic's lien claims.

Contractor, at its own expense, cost, and risk, shall defend any and all claims, actions, suits, or other proceedings that may be brought or instituted against the District, its officers, agents or employees, on account of or founded upon any cause, damage, or injury identified herein Article 5 and shall pay or satisfy any judgment that may be rendered against the District, its officers, agents or employees in any action, suit or other proceedings as a result thereof.

The Contractor's and Subcontractors' obligation to defend, indemnify and hold harmless the Owner, Architect, Inspector, the State of California and their officers, employees, agents and independent contractors hereunder shall include, without limitation, any and all claims, damages, and costs for the following: (1) any damages or injury to or death of any person, and damage or injury to, loss (including theft), or loss of use of, any property; (2) breach of any warranty, express or implied; (3) failure of the Contractor or Subcontractors to comply with any applicable governmental law, rule, regulation, or other requirement; (4) products installed in or used in connection with the Work; and (5) any claims of violation of the Americans with Disabilities Act ("ADA").

ARTICLE 6 - PROVISIONS REQUIRED BY LAW: Each and every provision of law and clause required to be inserted in this Contract shall be deemed to be inserted herein, and this Contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted or is not inserted correctly, then upon application of either party the Contract shall forthwith be physically amended to make such insertion or correction.

ARTICLE 7 - COMPONENT PARTS OF THE CONTRACT: The Contract entered into by this Agreement consists of the following Contract Documents, all of which are component parts of the Contract as if herein set out in full or attached hereto:

Notice Inviting Bids
Instructions to Bidders
Designation of Subcontractors
Non-Collusion Declaration
Bid Guarantee Form
Bid Bond
Bid Form
Contractor's Certificate Regarding Worker's Compensation
Acknowledgment of Bidding Practices Regarding Indemnity
Agreement Form
Payment Bond
Performance Bond
Guarantee
Escrow Agreement for Security Deposit In Lieu of Retention
Workers' Compensation/Employers Liability Endorsement
General Liability Endorsement
Automobile Liability Endorsement
Contractor's Certificate Regarding Drug-Free Workplace
Contractor's Certificate Regarding Alcohol and Tobacco

Contractor Certification of Pupil Contact and Employee List
Contractor's Certificate Regarding Background Checks
General Conditions
Supplementary and Special Conditions
Specifications
All Addenda as Issued
Drawings/Plans
Substitution Request Form
Requirements, Reports and/or Documents in the Project Manual or Other Documents Issued to Bidders

All of the above named Contract Documents are intended to be complementary. Work required by one of the above named Contract Documents and not by others shall be done as if required by all.

ARTICLE 8 - PREVAILING WAGES: Wage rates for this Project shall be in accordance with the general prevailing rate of holiday and overtime work in the locality in which the work is to be performed for each craft, classification, or type of work needed to execute the Contract as determined by the Director of the Department of Industrial Relations. Copies of schedules of rates so determined by the Director of the Department of Industrial Relations are on file at the administrative office of the District and are also available from the Director of the Department of Industrial Relations.

The following are hereby referenced and made a part of this Agreement and Contractor stipulates to the provisions contained therein.

1. Chapter 1 of Part 7 of Division 2 of the Labor Code (Section 1720 et seq.)

2. California Code of Regulations, Title 8, Chapter 8, Subchapters 3 through 6 (Section 16000 et seq.)

ARTICLE 9 - RECORD AUDIT: In accordance with Government Code section 8546.7(and Davis Bacon, if applicable) and Article 13.11 of the General Conditions, records of both the District and the Contractor shall be subject to examination and audit for a period of five (5) years after a Final Retention Payment or the Recording of a Notice of Completion, whichever occurs first.

ARTICLE 10 - CONTRACTOR'S LICENSE: The Contractor must possess throughout the Project a **Class B General Building Contractor's License**, issued by the State of California, which must be current and in good standing.

ARTICLE 11 - NOTICE AND SERVICE THEREOF: Any notice from one party to the other under the Contract shall be in writing and shall be dated and signed by the party giving such notice or by a duly authorized representative of such party. Any such notice shall not be effective for any purpose whatsoever unless served in the following manner, namely, (a) if the notice is given to the District, by personal delivery thereof to the Project Construction Manager of the District, or by depositing the same in the United States mail, enclosed in a sealed envelope, addressed to the District, postage prepaid and certified; (b) If the notice is given to the Contractor, by personal delivery thereof to said Contractor or to its duly authorized representative at the site of the project, or by depositing the same in the United States mail, enclosed in a sealed envelope, addressed to the Contractor at:

_____

_____

_____

postage prepaid and certified; and (c) if the notice is given to the surety or any other person, by personal delivery to such surety or other person, or by depositing the same in the United States mail, enclosed in a sealed envelope, addressed to such surety or other person, as the case may be, at the address of such surety or person last communicated by it to the party giving the notice, postage prepaid and certified.

IN WITNESS WHEREOF, this Agreement has been duly executed by the above named parties, on the day and year first above written.

Ventura Unified School District	CONTRACTOR:
By:_____	_____ Typed or Printed Name
By: _____ Ahsan Mirza Assistant Superintendent, Business Services	_____ Title
	_____ Signature
Dated: _____	
	_____ Type or Printed Name
	_____ Title (Authorized Officers or Agents)
	_____ Signature
	(CORPORATE SEAL)

PAYMENT BOND

(CALIFORNIA PUBLIC WORK)

KNOW ALL MEN BY THESE PRESENTS:

THAT WHEREAS, the VENTURA UNIFIED SCHOOL DISTRICT (sometimes referred to hereinafter as "Obligee") has awarded to _____ (hereinafter designated as the "Principal" or "Contractor"), an agreement for the work described as follows: _____ (hereinafter referred to as the "Public Work"); and

WHEREAS, said Contractor is required to furnish a bond in connection with said Contract, and pursuant to California Civil Code section 9550;

NOW, THEREFORE, We, _____, the undersigned Contractor, as Principal; and _____, a corporation organized and existing under the laws of the State of _____, and duly authorized to transact business under the laws of the State of California, as Surety, are held and firmly bound unto the VENTURA UNIFIED SCHOOL DISTRICT and to any and all persons, companies, or corporations entitled by law to file stop notices under California Civil Code section 9100, or any person, company, or corporation entitled to make a claim on this bond, in the sum of _____ Dollars ($_____), such sum being not less than one hundred percent (100%) of the total amount payable by said Obligee under the terms of said Contract, for which payment will and truly to be made, we bind ourselves, our heirs, executors and administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if said Principal, its heirs, executors, administrators, successors, or assigns, or subcontractor, shall fail to pay any person or persons named in Civil Code section 9100; or fail to pay for any materials, provisions, or other supplies, used in, upon, for, or about the performance of the work contracted to be done, or for any work or labor thereon of any kind, or for amounts due under the Unemployment Insurance Code, with respect to work or labor thereon of any kind; or shall fail to deduct, withhold, and pay over to the Employment Development Department, any amounts required to be deducted, withheld, and paid over by Unemployment Insurance Code section 13020 with respect to work and labor thereon of any kind, then said Surety will pay for the same, in an amount not exceeding the amount herein above set forth, and in the event suit is brought upon this bond, also will pay such reasonable attorneys' fees as shall be fixed by the court, awarded and taxed as provided in California Civil Code section 9550 et seq.

This bond shall inure to the benefit of any person named in Civil Code section 9100 giving such person or his/her assigns a right of action in any suit brought upon this bond.

It is further stipulated and agreed that the Surety of this bond shall not be exonerated or released from the obligation of the bond by any change, extension of time for performance, addition, alteration or modification in, to, or of any contract, Plans, or specifications, or agreement pertaining or relating to any scheme or work of improvement herein above described; or pertaining or relating to the furnishing of labor, materials, or equipment therefor; nor by any change or modification of any terms of payment or extension of time for payment pertaining or relating to any scheme or work of improvement herein above described; nor by any rescission or attempted rescission of the contract, agreement or bond; nor by any conditions precedent or subsequent in the bond attempting to limit the right of recovery of claimants otherwise entitled

to recover under any such contract or agreement or under the bond; nor by any fraud practiced by any person other than the claimant seeking to recover on the bond; and that this bond be construed most strongly against the Surety and in favor of all persons for whose benefit such bond is given; and under no circumstances shall the Surety be released from liability to those for whose benefit such bond has been given, by reason of any breach of contract between the Obligee and the Contractor or on the part of any obligee named in such bond; that the sole condition of recovery shall be that the claimant is a person described in California Civil Code section 9100, and who has not been paid the full amount of his or her claim; and that the Surety does hereby waive notice of any such change, extension of time, addition, alteration or modification herein mentioned.

IN WITNESS WHEREOF this instrument has been duly executed by the Principal and Surety above named, on the_____ day of _____, 20___.

PRINCIPAL/CONTRACTOR:

_____

By: _____

SURETY:

_____

By: _____
Attorney-in-Fact

IMPORTANT: THIS IS A REQUIRED FORM.

Surety companies executing bonds must possess a certificate of authority from the California Insurance Commissioner authorizing them to write surety insurance defined in California Insurance Code section 105, and if the work or project is financed, in whole or in part, with federal, grant or loan funds, Surety's name must also appear on the Treasury Department's most current list (Circular 570 as amended).

Any claims under this bond may be addressed to:

(Name and Address of Surety)	(Name and Address of agent or representative for service for service of process in California)
_____	_____
_____	_____
Telephone:_____	Telephone: _____

STATE OF CALIFORNIA)
) ss.
COUNTY OF)

On _____ before me, _____, a Notary Public in and for said State, personally appeared _____, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument as the Attorney-in-Fact of the _____ (Surety) and acknowledged to me that he/she/they subscribed the name of the _____ (Surety) thereto and his own name as Attorney-in-Fact on the executed instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

_____ (SEAL)
Notary Public in and for said State

Commission expires:_____

NOTE: A copy of the power-of-attorney to local representatives of the bonding company must be attached hereto.

PERFORMANCE BOND

(CALIFORNIA PUBLIC WORK)

KNOW ALL MEN BY THESE PRESENTS:

THAT WHEREAS, the VENTURA UNIFIED SCHOOL DISTRICT (sometimes referred to hereinafter as "Obligee") has awarded to _____ (hereinafter designated as the "Principal" or "Contractor"), an agreement for the work described as follows: _____ (hereinafter referred to as the "Public Work"); and

WHEREAS, the work to be performed by the Contractor is more particularly set forth in that certain contract for said Public Work dated _____ _____, (hereinafter referred to as the "Contract"), which Contract is incorporated herein by this reference; and

WHEREAS, the Contractor is required by said Contract to perform the terms thereof and to provide a bond both for the performance and guaranty thereof.

NOW, THEREFORE, we, _____, the undersigned Contractor, as Principal, and _____, a corporation organized and existing under the laws of the State of _____, and duly authorized to transact business under the laws of the State of California, as Surety, are held and firmly bound unto the VENTURA UNIFIED SCHOOL DISTRICT in the sum of _____ Dollars ($_____), said sum being not less than one hundred percent (100%) of the total amount payable by said Obligee under the terms of said Contract, for which amount well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT, if the bounded Contractor, his or her heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions, and agreements in said Contract and any alteration thereof made as therein provided, on his or her part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their intent and meaning; and shall faithfully fulfill guarantees of all materials and workmanship; and indemnify, defend and save harmless the Obligee, its officers and agents, as stipulated in said Contract, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect.

The Surety, for value received, hereby stipulates and agrees that it shall not be exonerated or released from the obligation of this bond (either by total exoneration or pro tanto) by any change, extension of time, alteration in or addition to the terms of the contract or to the work to be performed there under or the specifications accompanying the same, nor by any change or modification to any terms of payment or extension of time for any payment pertaining or relating to any scheme of work of improvement under the contract. Surety also stipulates and agrees that it shall not be exonerated or released from the obligation of this bond (either by total exoneration or pro tanto) by any overpayment or underpayment by the Obligee that is based upon estimates approved by the Architect. The Surety stipulates and agrees that none of the aforementioned changes, modifications, alterations, additions, extension of time or actions shall in any way affect its obligation on this bond, and it does hereby waive notice of any such changes, modifications, alterations, additions or extension of time to the terms of the contract, or to the work, or the specifications as well notice of any other actions that result in the foregoing.

Whenever Principal shall be, and is declared by the Obligee to be, in default under the Contract, the Surety shall promptly either remedy the default, or shall promptly take over and complete the Contract through its agents or independent contractors, subject to acceptance and approval of such agents or independent contractors by Obligee as hereinafter set forth, in accordance with its terms and conditions and to pay and perform all obligations of Principal under the Contract, including, without limitation, all obligations with respect to warranties, guarantees and the payment of Liquidated Damages; or, at Obligee's sole discretion and election, Surety shall obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by Obligee of the lowest responsible bidder, arrange for a contract between such bidder and the Obligee and make available as Work progresses (even though there should be a default or succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the "balance of the Contract Price" (as hereinafter defined), and to pay and perform all obligations of Principal under the Contract, including, without limitation, all obligations with respect to warranties, guarantees and the payment of Liquidated Damages. The term "balance of the Contract Price," as used in this paragraph, shall mean the total amount payable to Principal by the Obligee under the Contract and any modifications thereto, less the amount previously paid by the Obligee to the Principal, less any withholdings by the Obligee allowed under the Contract. Obligee shall not be required or obligated to accept a tender of a completion contractor from the Surety.

Surety expressly agrees that the Obligee may reject any agent or contractor which may be proposed by Surety in fulfillment of its obligations in the event of default by the Principal. Unless otherwise agreed by Obligee, in its sole discretion, Surety shall not utilize Principal in completing the Contract nor shall Surety accept a bid from Principal for completion of the work in the event of default by the Principal.

No final settlement between the Obligee and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

The Surety shall remain responsible and liable for all patent and latent defects that arise out of or relate to the Contractor's failure and/or inability to properly complete the Public Work as required by the Contract and the Contract Documents. The obligation of the Surety hereunder shall continue so long as any obligation of the Contractor remains.

Contractor and Surety agree that if the Obligee is required to engage the services of an attorney in connection with enforcement of the bond, Contractor and Surety shall pay Obligee's reasonable attorneys' fees incurred, with or without suit, in addition to the above sum.

In the event suit is brought upon this bond by the Obligee and judgment is recovered, the Surety shall pay all costs incurred by the Obligee in such suit, including reasonable attorneys' fees to be fixed by the Court.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of _____, 20___.

PRINCIPAL/CONTRACTOR:

_____

By: _____

SURETY:

_____

By: _____
Attorney-in-Fact

The rate of premium on this bond is _____ per thousand.

The total amount of premium charged: $_____ (This must be filled in by a corporate surety).

IMPORTANT: THIS IS A REQUIRED FORM.

Surety companies executing bonds must possess a certificate of authority from the California Insurance Commissioner authorizing them to write surety insurance defined in California Insurance Code section 105, and if the work or project is financed, in whole or in part, with federal, grant or loan funds, Surety's name must also appear on the Treasury Department's most current list (Circular 570 as amended).

Any claims under this bond may be addressed to:

(Name and Address of Surety)	(Name and Address of agent or representative for service for service of process in California)
_____	_____
_____	_____
Telephone:_____	Telephone: _____

STATE OF CALIFORNIA)
) ss.
COUNTY OF)

On _____, before me, _____, a Notary Public in and for said State, personally appeared _____, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument as the Attorney-in-Fact of the _____ (Surety) and acknowledged to me that he/she/they subscribed the name of the _____ (Surety) thereto and his own name as Attorney-in-Fact on the executed instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

_____ (SEAL)
Notary Public in and for said State

Commission expires:_____

NOTE: A copy of the power-of-attorney to local representatives of the bonding company must be attached hereto.

GUARANTEE

Guarantee for _____. We hereby guarantee that the _____, which we have installed in _____ _____ has been done in accordance with the Contract Documents, including without limitation, the drawings and specifications, and that the work as installed will fulfill the requirements included in the bid documents. The undersigned and its surety agrees to repair or replace any or all such work, together with any other adjacent work, which may be displaced in connection with such replacement, that may prove to be defective in workmanship or material within a period of _____TWO____ (____2___) year from the date of the Notice of Completion of the above-mentioned structure by the Ventura Unified School District, ordinary wear and tear and unusual abuse or neglect excepted.

In the event the undersigned or its surety fails to comply with the above-mentioned conditions within a reasonable period of time, as determined by the District, but not later than ten (10) days after being notified in writing by the District or within forty eight (48) hours in the case of an emergency or urgent matter, the undersigned and its surety authorizes the District to proceed to have said defects repaired and made good at the expense of the undersigned and its surety, who will pay the costs and charges therefor upon demand. The undersigned and its surety shall be jointly and severally liable for any costs arising from the District's enforcement of this Guarantee.

	Countersigned
_____	_____
(Proper Name)	(Proper Name)
By: _____	By: _____
_____	_____
(Signature of Subcontract or Contractor)	(Signature of General Contractor if for Subcontractor)

Representatives to be contacted for service:

Name: _____

Address: _____

_____

Phone Number: _____

ESCROW AGREEMENT FOR SECURITY DEPOSITS IN LIEU OF RETENTION

This Escrow Agreement is made and entered into by and between the Ventura Unified School District, 255 W. Stanley Avenue, Suite 100, Ventura CA 93001, hereinafter called "Owner", and _____ whose address is _____, hereinafter called "Contractor", and _____ whose address is _____, hereinafter called "Escrow Agent".

For the consideration hereinafter set forth, the Owner, Contractor and Escrow Agent agree as follows:

1. Pursuant to Section 22300 of the Public Contract Code of the State of California, Contractor has the option to deposit securities with Escrow Agent as a substitute for Retention earnings required to be withheld by Owner pursuant to the Construction Contract entered into between the Owner and Contractor for ____ _____in the amount of _____ dated _____ (hereinafter referred to as the "Contract"). Alternatively, on written request of the Contractor, the Owner shall make payments of the Retention earnings directly to the escrow agent. When Contractor deposits the securities as a substitute for Contract earnings, the Escrow Agent shall notify the Owner within ten (10) days of deposit. The market value of the securities at the time of the substitution shall be at least equal to the cash amount then required to be withheld as Retention under the terms of the Contract between the Owner and Contractor. Securities shall be held in the name of the Owner, and shall designate the Contractor as beneficial owner.

2. The Owner shall make progress payments to the Contractor for such funds which otherwise would be withheld from progress payments pursuant to the Contract provisions, provided that the Escrow Agent holds securities in the form and amount specified above.

3. When the Owner makes payments of Retentions earned directly to the Escrow Agent, the Escrow Agent shall hold them for the benefit of the Contractor until such time as the escrow created under this Contract is terminated. The Contractor may direct the investment of the payments into securities. All terms and conditions of this Agreement and the rights and responsibilities of the parties shall be equally applicable and binding when the Owner pays the Escrow Agent directly.

4. Contractor shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account and all expenses of the Owner. These expenses and payment terms shall be determined by the Owner, Contractor, and Escrow Agent.

5. The interest earned on the securities or the money market accounts held in escrow and all interest earned on that interest shall be for the sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to the Owner.

6. Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from the Owner to the Escrow Agent that Owner consents to the withdrawal of the amount sought to be withdrawn by Contractor.

7. The Owner shall have a right to draw upon the securities in the event of default by the Contractor. Upon seven (7) days' written notice to the Escrow Agent from the Owner of the notice of default under Article 2.2, Article 9.6 or Article 14, the Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by the Owner.

8. Upon receipt of written notification from the Owner certifying that the Contract is final and complete, and that the Contractor has complied with all requirements and procedures applicable to the

Contract, Escrow Agent shall release to Contractor all securities and interest on deposit less escrow fees and charges of the Escrow Account. The escrow shall be closed immediately upon disbursement of all moneys and securities on deposit and payment of fees and charges.

9. Escrow Agent shall rely on the written notifications from the Owner and the Contractor pursuant to Sections (5) to (8), inclusive, of this Agreement and the Owner and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of the securities and interest as set forth above.

10. The names of the persons who are authorized to give written notice or to receive written notice on behalf of the Owner and on behalf of Contractor in connection with the foregoing, and exemplars of their respective signatures are as follows:

On behalf of Owner:

_____

Title

_____

Name

_____

Signature

_____

Address

On behalf of Contractor:

_____

Title

_____

Name

_____

Signature

_____

Address

On behalf of Agent:

_____

Title

_____

Name

Signature

Address

At the time the Escrow Account is opened, the Owner and Contractor shall deliver to the Escrow Agent a fully executed counterpart of this Agreement.

IN WITNESS WHEREOF, the parties have executed this Agreement by their proper officers on the date set forth above.

OWNER	CONTRACTOR
Title	Title
Name	Name
Signature	Signature

INSURANCE DOCUMENTS & ENDORSEMENTS

The following insurance endorsements and documents must be provided to the Ventura Unified School District within ten (10) calendar days after receipt of notification of award. If the apparent low bidder fails to provide the documents required below, the District may award the Contract to the next lowest responsible and responsive bidder or release all bidders, and the bidder's bid security will be forfeited. All insurance provided by the bidder shall fully comply with the requirements set forth in Article 11 of the General Conditions.

General Liability Insurance: Certificate of Insurance with all specific insurance coverages set forth in Article 11 of the General Conditions, proper Project description, designation of the District as the Certificate Holder, a statement that the insurance provided is primary to any insurance obtained by the District and minimum of 30 days' cancellation notice. Bidder shall also provide required additional insured endorsement(s) designating all parties required in Article 11 of the General Conditions. The additional insured endorsement shall be an ISO CG 20 10 (04/13), or an ISO CG 20 38 (04/13), or their equivalent as determined by the District in its sole discretion.

Incidents and claims are to be reported to the insurer at:

Attn: _____

(Title) (Department)

_____

(Company)

_____

(Street Address)

_____

(City) (State) (Zip Code)

(_____) _____

(Telephone Number)

_____

Workers' Compensation/ Employer's Liability Insurance: Certificate of Workers' Compensation Insurance meeting the coverages and requirements set forth in Article 11 of the General Conditions, minimum of 30 days' cancellation notice, proper Project description, waiver of subrogation and any applicable endorsements.

Automobile Liability Insurance: Certificate of Automobile Insurance meeting the coverages and requirements set forth in Article 11 of the General Conditions, minimum 30 days' cancellation notice, any applicable endorsements and a statement that the insurance provided is primary to any insurance obtained by the District.

Incidents and claims are to be reported to the insurer at:

Attn: _____

(Title) (Department)

_____

(Company)

_____

(Street Address)

_____

(City) (State) (Zip Code)

(_____) _____

(Telephone Number)

DATE:_____ _____

CONTRACTOR

By:_____

Signature_____

CONTRACTOR CERTIFICATION OF PUPIL CONTACT AND EMPLOYEE LIST

To: Board of Education
Ventura Unified School District
Attention: Purchasing Department

From: _____ (Contractor Name)

Subject: Certification of Pupil Contact and Contract Employee List

Reference: Purchase Order #_____ Contract # _____

Project Name/Location_____

Our company has been contracted by your school district to perform one or more of the following or similar services that may have contact with pupils:

___ Janitorial ___ Landscape ___ Food-Related

___ Administrative ___ Transportation

___ Other Services (Specify)

Pursuant to California Education Code (EC) 45125.1, we as the entity (contractor) have read and understand the following requirements in regards to contract employees:

1) Provide for submission of the fingerprints of myself and those employees who may have any contact with pupils to the California Department of Justice (CDOJ) in a manner authorized by CDOJ. Such clearance documents, when received from CDOJ, are on file in our office and available for your inspection.

2) Do not permit any employees to come in contact with pupils until CDOJ clearance is ascertained.

3) Certify in writing to the governing board of your school district that none of our employees who may come in contact with pupils have been convicted of a violent or serious felony as defined in EC 45122.1 (as identified in Penal Code Sections 667.5 and 1192.7). Such certification is provided herein.

4) Provide a list of the names of company employees who may come in contact with pupils to the governing board of our school district. This enclosed list will be kept current and sent to you when there are updates.

5) Meet the above within legal and contract timeline requirements.

I hereby certify for our entity (contractor) that none of our employees who may come in contact with pupils in your school district have been convicted of a violent or serious felony as defined in EC 45122.1 (as identified in Penal Code Sections 667.6 and 1192.7).

The following is a list of our employees who may come in contact with pupils of your school district. I will keep this list current and send you a revised list when there are updates.

Name **Site**

_____

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_____

Company Name

_____ _____

Contact Name (Officer or Employee) Title

_____ _____

Authorized Signature Telephone Number

_____

Date

ARTICLE 1
DEFINITIONS

1.1 BASIC DEFINITIONS

NOTE: The following shall not be construed as a comprehensive list of all definitions in the Contract Documents and there may be other definitions set forth in the Contract Documents. Additionally, any references to any DSA forms, documents or requirements shall be construed to incorporate any updates, supplements, or additions. The Contractor shall be required to meet the latest DSA requirements applicable to the Project.

1.1.1 Action of the Governing Board is a vote of a majority of the District's Governing Board.

1.1.2 Approval means written authorization through action of the Governing Board

1.1.3 Architect means the architect, engineer, or other design professional engaged by the District to design and perform general observation of the work of construction and interpret the Drawings and Specifications for the Project. Also see Article 4.

1.1.4 As-Builts are a set of Plans and Specifications maintained by the Contractor clearly showing all changes, revisions, substitutions, field changes, final locations, and other significant features of the Project. The As-Builts shall be maintained continuously throughout the Work for the Project and is both a prerequisite to the issuance of Payment Application and a requirement for Contract Close-Out. See Article 3.17

1.1.5 Beneficial Occupancy is the point in time when a building or buildings are fit for occupancy is fit for occupancy and its intended use. Basic requirements are the building is safe, at or near Substantial Completion, and all fire/ life safety items are approved and operational. The fact that a building is occupied does not mean that the building is ready for Beneficial Occupancy if there are elements that are unsafe or if fire/ life safety items are not approved and operational. Taking occupancy on a structure that is under a fire watch is not considered beneficial occupancy. Further, taking of Beneficial Occupancy is not a point in time when retention is due unless the entire school has obtained a Certificate of Substantial Completion that meets the definition of 1.1.46.

1.1.6 Claims. A Claim is a request for payment, supported by back-up documentation which includes, invoices time sheets, or other documents substantiating legitimacy or entitlement that is submitted during the Project or immediately following the Project made prior to the Final Retention Payment Application and prior to Final Completion of the Project. A "Claim" means a separate demand by the Contractor for (1) time extension, (2) payment of money or damages arising from Work done by or on behalf of the Contractor pursuant to the CONTRACT and payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled to, or (3) and amount the payment of which is disputed by the District. See Article 4.6.

1.1.7 Change Order (CO). A CO is a written instrument prepared by the Architect and signed by the District (as authorized by the District's Governing Board), the Contractor, and the Architect, stating their agreement upon (1) A description of a change in the Work, (2) The amount of the adjustment in the Contract Sum, if any; and (3) The extent of the adjustment in the Contract Time, if any. See Article 7.2.

1.1.8 Change Order Request (COR). A COR is a written request supported by backup documentation prepared by the Contractor requesting that the District and the Architect issue a CO based

upon a proposed change, or a change that results in an adjustment in cost, time or both, or arising from an RFP, CCD or ICD. (See Article 7.6)

1.1.9 Close-Out means the process for Final Completion of the Project, but also includes the requirements for the DSA Certification that the Project is Complete (See DSA Certification Guide). See Article 9.9.

1.1.10 Construction Change Document (CCD). A Construction Change Document is a DSA term that is utilized to address changes to the DSA approved Plans and Specifications. There are two types of Construction Change Documents. (1) DSA approved CCD Category A (DSA Form 140) for work affecting structural, access or fire/ life safety of the Project which will require a DSA approval; and, (2) CCD Category B (DSA Form 141) for work NOT affecting structural safety, access compliance or fire/ life safety that will not require a DSA approval (except to confirm that no approval is required). See Article 7.3.

1.1.11 Complete/ Completion/ Final Completion means that all Work in the Contract Documents is finished, the requirements of the Contract Documents have been met, the Project has been Closed Out, and all Work has ceased on the Project. This may also be referred to as Final Completion. In most cases, the recording of a Notice of Completion shall represent Completion of the Project. Beneficial Occupancy does not mean the Work is Complete.

1.1.12 Completion Date is the date when all Work for the Project shall be Substantially Complete and is the date assigned at the end of the Contract Time for the Project. See Article 1.1.46.

1.1.13 Construction Manager. The Construction Manager is a consultant to the District contracted to assist in Project planning, management and construction of the Project. If there is a Construction Manager, they may assist in various aspects of the Project including, but not limited to Monitoring the progress of the construction, reviewing and monitoring the schedule, progress of work, monitoring pay requests, facilitating communications, advising the District and its Board of Education on various aspects of the construction process, monitoring the RFI, COR, CCD, ICD, RFP, Claims, Disputes and other Project related processes.

1.1.14 Contract or Agreement when the terms are used in these General Conditions shall be references to the Contract Documents as defined herein.

1.1.15 Contract Documents (sometimes referred to as Construction Documents) consist of the Agreement between District and Contractor (hereinafter the Agreement or Contract), Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to bid, instructions to bidders, notice to bidders, and the requirements contained in the Bid Documents, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is a written amendment to the Contract signed by parties, a Change Order, a Construction Change Document, or a written order for a minor change in the Work issued by the Architect. The Contract Documents collectively form the Contract. The Contract represents the entire and integrated Agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a written Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind between the Architect and Contractor, between the District and any Subcontractor or Sub-subcontractor, or between any persons or entities other than the District and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

1.1.16 Contract Time is the time period specified in the Contract Documents in which the Project shall be completed. This is sometimes referred to a Contract Duration, or "time in which the Contractor has to complete the Project". See Article 8.1.1

1.1.17 Contractor, District, and Architect are those mentioned as such in the Agreement. They are treated throughout the Contract Documents as if they are of singular number and neuter gender. Any reference to "Owner" shall mean "District" or Ventura Unified School District.

1.1.18 Cure is the act of remedying a material failure to perform under the terms of the Contract Documents during the time provided to correct Contractor's Default. Specific time periods are provided to Cure and Correct a Contractor Default under Article 14 and for a Partial Default under Article 2.2 as well as elsewhere in the Contract Documents.

1.1.19 Days means calendar days unless otherwise specifically stated.

1.1.20 Default is a material breach of Contract. A Termination for Cause under Article 14 is a declaration of Default of the Contract and shall act as a demand upon the Surety to perform under the terms of the Performance Bond. Partial Defaults may also be tendered to the Surety at District's discretion. See Article 2.2.

1.1.21 Dispute. A dispute is a disagreement on terms or conditions of the Project where the Contractor's opinion of the Project, Payment, Change Order or Request for Proposal differs from that of the District or Architect. A dispute only rises to the level of a claim once the dispute is assembled with back-up documentation and presented for evaluation. See Article 4.6

1.1.22 District Representative is the person designated by the District to represent the District during the Construction for the Project. This District Representative shall have the delegated authority as further defined in Article 1.1.2. This District Representative may be an employee of the District who may have the delegated authority as set forth in Article 1.1.3, and may also include Construction Managers. In some cases, the District and its Board may be assisted by a Construction Manager. When a Construction Manager is assisting the District, the Contractor, Architect, and Inspector shall have a primary contact with the District's Construction Manager who will advise the District.

1.1.23 Drawings or Plans are graphic and pictorial portions of the Contract Documents prepared for the Project and approved changes thereto, wherever located and whenever issued, showing the design, location, and scope of the Work, generally including Plans, elevations, sections, details, schedules, and diagrams as drawn or approved by the Architect. Sometimes Drawings will also be included in Addenda, Change Orders, and Specifications.

1.1.24 DSA is the Division of State Architect. DSA is the agency that provides design and construction oversight for K-12 Schools, Community Colleges, and State Funded Charter School Projects. DSA is the responsible agency for this Project and Contractor has submitted a bid for the Project since Contractor is familiar with Contractor's responsibilities under the DSA requirements more thoroughly set forth at Title 24 of the California Code of Regulations. Contractor agrees to abide by the jurisdiction of DSA and shall construct the Project to conform with the approved Plans, Specifications, Addenda, and Change Orders (inclusive of approved CCD's and ICD's issued by the District pending CCD approval). See DSA website.

1.1.25 Emergency shall be defined as a sudden, unexpected occurrence, involving a clear and imminent threat to the continuation of school classes, a critical path delay that will result in not being able to occupy the school when students arrive to use the facility, danger from the facility or from outside the

facility, Act of God, or other action which requires immediate action to prevent or mitigate loss of, or damage to, life, health, property, or essential public services.

1.1.26 Float the total number of days an activity may be extended or delayed without delaying the Completion Date shown in the schedule. Float will fall into three categories: (1) Rain Days; (2) Governmental Delays; and, (3) Project Float. See Article 8.1.4.

1.1.27 Immediate Change Directive. (ICD) A written order prepared by the Architect and signed by the District and the Architect, directing a change in the Work where the Work must proceed immediately and stating a proposed basis for adjustment, if any, in the Contract Sum or Contract Time, or both. See Article 7.3

1.1.28 Inspector of Record (IOR)/ Project Inspector (PI) is the individual retained by the District in accordance with Title 24 of the California Code of Regulations and who will be assigned to the Project

1.1.29 Notice of Non-Compliance (DSA Form 154) is a document issued by the Inspector if there is a deviation from the DSA approved Plans, Specifications, and Change Orders. See Article 7.1.2.

1.1.30 Payment Application or Certificate of Payment is the Contractor's certified representation of the actual level of Work performed on the Project. Payment Applications are sometimes also called "Certificate of Payment", "Request for Payment", "Payment Application", or similar terms, and shall follow the Schedule of Values that are approved by the Architect, Inspector and District. See Article 9.3.

1.1.31 Project is the complete construction of the Work performed in accordance with the Contract Documents.

1.1.32 Project Manual is the volume assembled for the Work which may include, without limitation, the bidding requirements, sample forms, Conditions of the Contract, and Specifications.

1.1.33 Provide shall include "provide complete in place," that is "furnish and install complete."

1.1.34 Punch List/ Punch Item/ Incomplete Punch Item is a list of minor repair items, prepared after the issuance of a Certificate of Substantial Completion, by the Inspector and Architect of Work required in order to complete the Contract Documents and ensure compliance with the DSA Approved Plans so the Project may be Closed Out. Issuance of the Retention Payment is dependent of the proper completion of the Punch List. See Article 9.9.

1.1.34.1*Contractor's List of Punch Items* is a list of minor repair items the Contractor submits when the Contractor considers the Work Substantially Complete. Submission of this List of Incomplete Punch Items is the Contractor's representation that the Project is Substantially Complete. See Article 9.9.1

1.1.35 Request for Information (RFI) is a written request prepared by the Contractor requesting the Architect to provide additional information necessary to clarify or amplify an item which the Contractor believes is not clearly shown or called for in the Drawings or Specifications, or to address problems which have arisen under field conditions. See Article 7.4.

1.1.36 Request for Proposal (RFP) is a written request prepared by the Architect (and/or CM) requesting the Contractor to submit to an estimate of the effect of a proposed change on the Contract Price and (if applicable) the Contract Time. See Article 7.5.

1.1.37 Safety Orders are those issued by any city, county, state or federal agency having jurisdiction over the Project.

1.1.38 Schedule is the Contractor's view of the practical way in which the Work will be accomplished. In this Agreement there is a requirement for a Baseline Schedule and regular Schedule Updates that show all Work to be completed during the Contract Time and shall include all items listed under Article 8.3.2.9.1. See Article 8 of the General Conditions.

1.1.39 Schedule of Values is a detailed breakdown of the Contract Price for each Project, building, Phase of Work or Site as determined by the District. This Schedule of Values shall adequately detail the price for the Work so Progress Payments Applications can be meaningfully reviewed by the Inspector, Architect of Record, Engineer of Record, and District. (See Article 9.2)

1.1.40 Separate Contracts are Contracts that the District may have with other Contractors, vendors, suppliers, or entities to perform Work on the Project. This may include, but is not limited to Multi-Prime Trade Contractors, furniture installers, testing agencies, clean-up contractors, or network or low voltage contractors. Contractor shall plan for certain other contractors that may also be working on the Project site and address these other contractors in Contractor's Schedule. See Article 6.

1.1.41 Site refers to the grounds of the Project as defined in the Contract Documents and such adjacent lands as may be directly affected by the performance of the Work.

1.1.42 Specifications are that portion of the Contract Documents consisting of the written requirements for material, equipment, construction systems, instructions, quality assurance standards, workmanship, and performance of related services.

1.1.43 Standards, Rules, and Regulations referred to are recognized printed standards and shall be considered as one and a part of these Specifications within limits specified. Federal, state and local regulations are incorporated into the Contract Documents by reference.

1.1.44 Stop Work Order, or an Order to Comply, is issued when either (1) the Work proceeds without DSA approval; (2) the Work proceeds without a DSA Inspector of Record, or (3) where DSA determines that the Work is not being performed in accordance with applicable rules and regulations, and would compromise the structural integrity of the Project or would endanger lives. If a Stop Work Order is issued, the Work in the affected area shall cease until DSA withdraws the Stop Work Order. Pursuant to Education Code section 17307.5(b), the District shall not be held liable in any action filed against the District for any delays caused by compliance with the Stop Work Order

1.1.45 Subcontractor, as used herein, includes those having direct or indirect contracts with Contractor and ones who furnished labor, material or services for a special design according to Plans, Drawings, and Specifications of this Work.

1.1.46 Substantial Completion/ Substantially Complete(d) is not reached unless and until each of the following three (3) conditions have been met: (1) all contractually required items have been installed with the exception of only minor and Incomplete Punch List Items (See Article 9.9.1.1); (2) All Fire/Life Safety Systems have been installed, and are working and signed off on the DSA Form 152 Inspection Card, and all building systems including mechanical, electrical and plumbing are all functioning; and (3) the

Project is fit for occupancy and its intended use. For the purposes of this Contract, any references to Completion Date means Substantial Completion Date.

1.1.47 Substitution is a change in product, material, equipment, or method of construction from those required by the Construction Documents proposed by the Contractor. For this Project, a Substitution is subject to the filing of a Construction Substitution Request Form at the time of bid and meeting the requirements of Article 3.10.

1.1.48 Supplementary Conditions/ Supplementary General Conditions/ Special Conditions are terms that are sometimes used interchangeably and refer to any additional requirements or changes to the General Conditions as noted.

1.1.49 Surety is the person, firm, or corporation that executes as a bid bond, Payment Bond or Performance Bond guarantor on the Contractor's Bid, Contractor's Performance on the Contract and Payment of the Contractor's Subcontractors, material suppliers, vendors and labor on the Project. The Surety is bound to the same extent as the Contractor is bound once a Default occurs. A default includes a Termination for Substantial Failure to Perform under Article 14, but also includes any breach of Contract and is subject to the requirements and responsibilities as set forth in the Performance Bond.

1.1.50 Work shall include all labor, materials, services and equipment necessary for the Contractor to fulfill all of its obligations pursuant to the Contract Documents. It shall include the initial obligation of any Contractor or Subcontractor who performs any portion of the Work, to visit the Site of the proposed Work (a continuing obligation after the commencement of the Work), to fully acquaint and familiarize itself with the conditions as they exist and the character of the operations to be carried out under the Contract Documents, and make such investigation as it may see fit so that it shall fully understand the facilities, physical conditions, and restrictions attending the Work under the Contract Documents. Each such Contractor or Subcontractor shall also thoroughly examine and become familiar with the Drawings, Specifications, and associated Contract Documents and bid documents before preparing and submitting any bid.

1.1.51 Workers include laborers, workers, and mechanics.

1.2 EXECUTION, CORRELATION AND INTENT

1.2.1 Correlation and Intent

1.2.1.1 *Documents Complementary and Inclusive*. The Contract Documents are complementary and are intended to include all items required for the proper execution and completion of the Work. All Contract Documents form the Contractor's Contract with the District. Any item of Work mentioned in the Specifications and not shown on the Drawings, or shown on the Drawings and not mentioned in the Specifications, shall be provided by Contractor as if shown or mentioned in both. The Contractor is bound to provide the Work complete and is under a legal duty to carefully study Plans and schedule operations well ahead of time and identify inconsistencies with the Plans and Specifications and call such inconsistencies to the attention of the Architect or Registered Engineer through the Inspector under Section 4-343(b) of Title 24.

1.2.1.2 *Work to be Complete*. Contractor has thoroughly studied the Contract Documents and understands that the District contracted with Contractor to provide a complete Project which means complete systems and buildings. The entire set of Contract Documents shows a complete Project and Contractor agrees that there are multiple disciplines putting together a set of Contract Documents. Thus, if portions of a system are shown on some Drawings and not others, this does not mean

the Contractor is to only provide part of a system. For example, if an air conditioning unit is shown on the mechanical Drawings, the plumbing for the air conditioning is shown on another Drawing, and the electrical shown on the electrical Drawings, the Contractor is to provide a complete and working air conditioning system. The only time when an item is supplied incomplete is if the system is shown specifically as incomplete since others will be completing the system. Work includes, but is not limited to materials, workmanship, and manufacture of fabrication of components for the Project.

1.2.1.3 *Coverage of the Drawings and Specifications*. The Drawings and Specifications generally describe the Work to be performed by Contractor. Generally, the Specifications describe Work which cannot be readily indicated on the Drawings and indicate types, qualities, and methods of installation of the various materials and equipment required for the Work. It is not intended to mention every item of Work in the Specifications, which can be adequately shown on the Drawings, or to show on the Drawings all items of Work described or required by the Specifications even if they are of such nature that they could have been shown. All materials or labor for Work, which is shown on either the Drawings or the Specifications (or is reasonably inferable therefrom as being necessary to complete the Work), shall be provided by the Contractor. The Contractor is responsible for the whole Project as contractually set forth as the Contract Documents. It is intended that the Work be of sound, quality construction, and the Contractor shall be responsible for the inclusion of adequate amounts to cover installation of all items indicated, described, or implied in the portion of the Work to be performed by them.

1.2.1.4 *Conflicts*. In the event there is a discrepancy between the various Contract Documents, it is intended that the more stringent, higher quality, and greater quantity of Work shall apply.

1.2.1.5 *Conformance with Laws*. Each and every provision of law required by law to be inserted in this Contract shall be deemed to be inserted herein, and the Contract shall be read and enforced as though it were included herein, even if through mistake or otherwise any such provision is not inserted, or is not correctly inserted.

Before commencing any portion of the Work, Contractor shall check and review the Drawings and Specifications for such portion for conformance and compliance with all laws, ordinances, codes, rules and regulations of all governmental authorities and public and municipal utilities affecting the construction and operation of the physical plant of the Project, all quasi-governmental and other regulations affecting the construction and operation of the physical plant of the Project, and other special requirements, if any, designated in the Contract Documents. Such checking shall include review of Title 24 of the California Code of Regulations, California Building Code, local utility, local water connection, local grading and all other applicable agencies. In the event Contractor observes any violation of any law, ordinance, code, rule or regulation, or inconsistency with the Contract Documents, Contractor shall, within five (5) days, notify the Inspector, Architect and District in writing of same and shall ensure that any such violation or inconsistency shall be corrected in the manner provided hereunder prior to the construction of that portion of the Project. (See Title 24 Section 4-343)

The Contractor shall bear all expenses of correcting Work done contrary to said laws, ordinances, rules, and regulations if the Contractor performed same (1) without first consulting the Architect for further instructions regarding said Work or (2) disregarded the Architect's instructions regarding said Work.

1.2.1.6 *Ambiguity and Inconsistency*. Before commencing any portion of the Work, Contractor shall carefully examine all Drawings and Specifications and other information given to Contractor as to materials and methods of construction and other Project requirements. Prior to commencing any portion of the Work, Contractor shall notify Architect and District in writing of any perceived or alleged error, inconsistency, conflict, ambiguity, or lack of detail or explanation in the

Drawings and Specifications in the manner provided herein. If the Contractor or its Subcontractors, material or equipment suppliers, or any of their officers, agents, and employees performs, permits, or causes the performance of any Work under the Contract Documents, which it knows or should have known to be in error, inconsistent, or ambiguous, or not sufficiently detailed or explained, Contractor shall bear any and all costs arising therefrom including, without limitation, the cost of correction thereof without increase or adjustment to the Contract Price or the time for performance. Contractor shall maintain an adequate inspection system and perform personal observations and review work and pre-plan the project to ensure the Work performed under the Contract conforms to Contract requirements. Contractor shall maintain records of such review and observation to ensure strict compliance with the terms of the Contract.

1.2.1.7 *Typical Parts and Sections.* Whenever typical parts or sections of the Work are completely detailed on the Drawings, and other parts or sections which are of the same construction are shown in outline only, the complete or more detailed shall apply to the Work which is shown in outline.

1.2.1.8 *Dimensions.* Dimensions of Work shall not be determined by scale or rule. Figured dimensions shall be followed at all times. If figured dimensions are lacking on Drawings, Architect shall supply them on request. The Architect's decisions on matters relating to aesthetic effect will be final.

1.2.2 Addenda and Deferred Approvals

1.2.2.1 *Addenda* are the changes in Specifications, Drawings, Contract Documents, and Plans which have been authorized in writing by the District or Architect, and which alter, explain, or clarify the Contract Documents. Addenda shall govern over all other Contract Documents. Subsequent addenda issued shall govern over prior addenda unless otherwise specified in the addenda.

1.2.2.2 *Deferred Approvals*. Deferred Approvals are Submittals that are reviewed by the Architect (or Engineer of Record) and submitted to DSA for approval based on thorough detailing of manufacturer and Project specific design. See Article 3.9.1 and 3.9.3. The Deferred Approval item cannot be fully detailed on the originally approved Drawings or Specifications because of variations in product design and manufacture. Contract Documents which require Deferred Approval items are meant to be for illustration purposes only. Approval of Plans for such a portion of the Work may be deferred until the material suppliers and Subcontractors are selected. All Deferred Approvals are noted in the Plans and Specifications. Contractor is responsible for all Deferred Approval requirements set forth in the Contract Documents. Contractor is responsible to comply with all laws, building codes, Title 24 and regulations necessary to obtain all necessary approvals, including those required from the Division of the State Architect ("DSA") and the State Fire Marshall. Contractor shall not be granted an extension of time for failure to plan, schedule for and obtain necessary approvals. Contractor shall Schedule all Deferred Approval items in the Baseline Schedule and Schedule Updates under Article 3.9.6

1.2.3 Specification Interpretation

1.2.3.1 *Titles*. The Specifications are separated into titled sections for convenience only and not to dictate or determine the trade or craft involved.

1.2.3.2 *As Shown, Etc*. Where "as shown," "as indicated," "as detailed," or words of similar import are used, reference is made to the Drawings accompanying the Specifications unless otherwise stated. Where "as directed," "as required," "as permitted," "as authorized," "as accepted," "as selected," or words of similar import are used, the direction, requirement, permission, authorization, approval, acceptance, or selection by Architect is intended unless otherwise stated.

1.2.3.3 *General Conditions*. The General Conditions and Supplementary General Conditions are a part of the Contract Documents which further defines and refines the Contract entered between the Contractor and District.

1.2.3.4 *Abbreviations*. In the interest of brevity, the Specifications are written in an abbreviated form and may not include complete sentences. Omission of words or phrases such as "Contractor shall," "shall be," etc., are intentional. Nevertheless, the requirements of the Specifications are mandatory. Omitted words or phrases shall be supplied by inference in the same manner as they are when a "note" occurs on the Drawings. In the interest of brevity, the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

1.2.3.5 *Plural*. Words in the singular shall include the plural whenever applicable or the context so indicates.

1.2.3.6 *Metric*. The Specifications may indicate metric units of measurement as a supplement to U.S. customary units. When indicated thus: 1" (25 mm), the U. S. customary unit is specific, and the metric unit is nonspecific. When not shown with parentheses, the unit is specific. The metric units correspond to the "International System of Units" (SI) and generally follow ASTM E 380, "Standard for Metric Practice."

1.2.3.7 *Standard Specifications*. Any reference to standard specifications of any society, institute, association, or governmental authority is a reference to the organization's standard specifications, which are in effect at the date of the Contractor's proposal unless directed otherwise. If applicable specifications are revised prior to completion of any part of the Work, the Contractor may, if acceptable to Architect, perform such Work in accordance with the revised specifications. The standard specifications, except as modified in the Specifications for the Project, shall have full force and effect as though printed in the Specifications. Architect will furnish, upon request, information as to how copies of the standard specifications referred to may be obtained.

1.2.4 Rules of Document Interpretation

1.2.4.1 In the event of conflict within the Drawings, the following rules shall apply:

a. General Notes, when identified as such, shall be incorporated into other portions of Drawings.

b. Schedules, when identified as such, are complementary with other notes and other portions of Drawings including those identified as General Notes.

c. Larger scale Drawings shall take precedence over smaller scale Drawings.

d. At no time shall the Contractor base construction on scaled Drawings.

1.2.4.2 Specifications shall govern as to materials, workmanship, and installation procedures.

1.2.4.3 If Contractor observes that Drawings and Specifications are in conflict, Contractor shall, prior to commencing work, notify the Architect in writing for the purposes of obtaining an interpretation of the Contact Documents.

1.2.4.4 In the case of conflict or inconsistencies, the order of precedence shall be as follows:

a. General Conditions take precedence over Drawings and Specifications.

b. Supplemental Conditions take precedence over General Conditions.

c. The Agreement Form shall take precedence over the Supplemental Conditions.

d. In the case of disagreement or conflict between or within Specifications, and Drawings, the more stringent, higher quality, and greater quantity of Work shall apply.

e. Addenda shall take precedence over Drawings and Specifications.

f. General Conditions shall take precedence over Addenda.

g. Drawings and Specifications take precedence over the Soils Report.

1.3 OWNERSHIP AND USE OF ARCHITECT'S DRAWINGS, SPECIFICATIONS AND OTHER DOCUMENTS

The Drawings, Specifications, and other Contract Documents for the Project are the property of the District and/or Architect pursuant Contract requirements between the District and Architect. The Contractor may retain one Contract record set. Neither the Contractor nor any Subcontractor, or material or equipment supplier shall own or claim a Copyright in the Drawings, Specifications, and other documents prepared by the Architect. All copies except the Contractor's record set, shall be returned or properly accounted for upon completion of the Work. The Drawings, Specifications, and other documents prepared by the Architect, and copies thereof furnished to the Contractor are not to be used by the Contractor or any Subcontractor, Sub-subcontractor, or material or equipment supplier on other projects or for additions to this Project outside the scope of the Work. The District and/or Architect hereby grants the Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers a limited license to use applicable portions of the Drawings, Specifications, and other documents prepared for the Project in the execution of their Work under the Contract Documents. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the District's property interest or other reserved right.

ARTICLE 2
DISTRICT

2.1 INFORMATION AND SERVICES REQUIRED OF THE DISTRICT

2.1.1 Site Survey

The District will furnish, at its expense, a legal description of the Site and a land survey showing the boundaries of the Site. Contractor shall be responsible for all surveys regarding location of construction, grading and site work.

2.1.2 Soils

When required by the scope of the Project, the District will furnish, at its expense, the services of geotechnical engineers or consultants when reasonably required and deemed necessary by the Architect or as required by local or state codes. Such services, with written reports and appropriate written professional recommendations, may include test boring, test pits, soil bearing values, percolation tests, air and water pollution tests, and ground corrosion and resistivity tests, including necessary operations for determining subsoil, air, and water conditions.

2.1.3 Soils Report Part of the Contract Documents: Contractor Reliance

A soils investigation report has been obtained from test holes at the Site, and such report is incorporated into this Contract and made available for the Contractor's use in preparing its bid and Work under this Contract. Where the Plans and Specifications are more specific and provide more significant structure, systems, reinforcing, thicknesses, or construction methods, the Drawings shall control over the soils report. The soils report is available at the Architect's office for review and it is Contractor's responsibility to ensure that Contractor has reviewed the soils investigation report. Any information obtained from such report or any other information given on Drawings as to subsurface soil condition or to elevations of existing grades or elevations of underlying rock is approximate only. If, during the course of Work under this Contract, Contractor encounters subsurface conditions which differ materially from those indicated in the soils report, then Contractor shall notify the District within five (5) calendar days of discovery of the condition, and changes to the Contract Price may be made in accordance with Article 7 entitled "Changes in the Work." Contractor agrees that no claim against District will be made by Contractor for damages and hereby waives any rights to damages in the event the Contractor fails to notify District within the five-day period mentioned above.

WARNING: DISTRICT DOES NOT WARRANT THE SOILS AT THE PROJECT SITE. CONTRACTOR HAS REVIEWED AND IS FAMILIAR WITH THE REQUIREMENTS OF THE SOILS INVESTIGATION REPORT. CONTRACTOR UNDERSTANDS THAT PLANS, DRAWINGS AND SPECIFICATIONS SUPERSEDE THE SOILS REPORT IF THERE ARE CONFLICTS. FURTHER, IN ADDITION TO THE INFORMATION IN THE SOILS REPORT, CONTRACTOR HAS CONDUCTED AN INDEPENDENT INVESTIGATION OF THE PROJECT SITE AND THE SOILS CONDITIONS OF THE SITE. DISTRICT DOES NOT WARRANT THE SOILS CONDITIONS OF THE SITE AND CONTRACTOR IS FULLY RESPONSIBLE TO ASCERTAIN SITE CONDITIONS FOR THE PURPOSES OF DETERMINING CONSTRUCTION MEANS AND METHODS PRIOR TO COMMENCING CONSTRUCTION.

2.1.4 Utilities

2.1.4.1 *Location of Point of Connection*. The locations shown for the point of connection are approximate. It shall be the responsibility of the Contractor to determine the exact location of all service connections.

2.1.4.2 *Regional Notification Center.* Contractor, except in an emergency, shall contact the appropriate regional notification center at least two (2) business days prior to commencing any excavation if the excavation will be conducted in an area or in a private easement which is known, or reasonably should be known, to contain subsurface installations other than the underground facilities owned or operated by the District, and obtain an inquiry identification number from that notification center. See Government Code section 4216.3. No excavation shall be commenced and carried out by the Contractor unless such an inquiry identification number has been assigned to the Contractor or any Subcontractor of the Contractor and the District has been given the identification number by the Contractor. Any damages arising from failure to make appropriate regional notification shall be at the sole risk of Contractor. Contractor shall solely be responsible for any fines, penalties or damages for violation of this Article and Government Code section 4216.6 or 4216.7. Any delays caused by failure to make appropriate regional notification shall be at the sole risk of Contractor and shall not be considered for extension of time pursuant to Article 8.4.

2.1.4.3 *Utilities - Removal and Restoration.* The District has endeavored to determine the existence of utilities at the Site of the Work from the records of the District of known utilities in the vicinity of the Work. The positions of these utilities as derived from such records are shown in the Contract Documents. Thus, the locations of the main or trunklines located on the Drawings are approximate locations and not exact.

No excavations were made to verify the locations shown for underground utilities. Other than the main or trunkline, which the District has endeavored to locate on the Plans, service connections or laterals to these utilities may not be shown on the Plans. It shall be the responsibility of the Contractor to determine the exact location of all service connections. The Contractor shall make its own investigations, including exploratory excavations, to determine the locations and type of service connections, prior to commencing work which could result in damage to such utilities. The Contractor shall immediately notify the District's representative as to any utility main or trunkline discovered by Contractor in a different position than provided by the Regional Notification Center. With respect to main or trunklines, Contractor is to immediately notify District if the location is substantially different than as shown in the Contract Documents.

Contractor shall coordinate its Work with all utilities, including, but not limited to electricity, water, gas and telephone and meet with said utilities prior to the start of any work. Contractor shall show timing of all utility coordination activities under the Scheduling requirements of Article 8.

2.1.4.4 *Other Utilities.* In case it should be necessary to remove, relocate, or temporarily maintain a utility because of interference with the Work, the work on the utility shall be performed and paid for as follows:

When it is necessary to remove, relocate or temporarily maintain a service connection, the cost of which is not required to be borne by the owner of the service connection, the Contractor shall bear all expenses incidental to the work on the service connection. The work on the service connection shall be done in a manner satisfactory to the owner thereof; it being understood that the owner of the service connection has the option of doing such work with their own forces or permitting the work to be done by the Contractor.

When it is necessary to remove, relocate, or temporarily maintain a utility which is in the position shown on the Plans, the cost of which is not required to be borne by the owner thereof, the Contractor shall bear all expenses incidental to the work on the utility. The work on the utility shall be done in a manner satisfactory to the owner thereof; it being understood that the owner of the utility has the option of doing such work with their own forces or permitting the work to be done by the Contractor.

When it is necessary to remove, relocate, or temporarily maintain a utility which is not shown on the Plans or is in a position different from that shown on the Plans and were it in the position shown on the Plans would not need to be removed, relocated, or temporarily maintained, and the cost of which is not required to be borne by the owner thereof, the District will make arrangements with the owner of the utility for such work to be done at no cost to the Contractor, or will require the Contractor to do such work in accordance with Article 7 or will make changes in the alignment and grade of the Work to obviate the necessity to remove, relocate, or temporarily maintain the utility. Changes in alignment and grade will be ordered in accordance with Article 7 herein.

No representations are made that the obligations to move or temporarily maintain any utility and to pay the cost thereof is or is not required to be borne by the owner of such utility, and it shall be the responsibility of the Contractor to investigate to find out whether said cost is required to be borne by the owner of the utility.

The right is reserved to governmental agencies and to owners of utilities to enter at any time upon any street, alley, right-of-way, or easement for the purpose of making changes in their property made necessary by the Work and for the purpose of maintaining and making repairs to their property.

2.1.5 Existing Utility Lines; Removal, Relocation

2.1.5.1 *Main or Trunkline Facilities*. If the Contractor while performing the Contract discovers utility facilities not identified in the Contract Documents, Contractor shall notify the District and utility in writing prior to commencing work.

The owner of the public utility shall have the sole discretion to perform repairs or relocation work or permit the Contractor to do such repairs or relocation work at a reasonable price.

The Contractor shall exercise reasonable care and shall be compensated by the District for the actual verified field costs of locating, and removing, relocating, protecting or temporarily maintaining such main or trunkline utility facilities located in a substantially different location than in the Plans and Specifications, and for equipment in use on the project necessarily idled during such work. This Work shall be performed in accordance with Article 7 of these General Conditions.

2.1.5.2 *Assessment*. Nothing in these subparagraphs shall be deemed to require the District to indicate the presence of existing service laterals or appurtenances whenever the presence of such utilities on the Site can be inferred from the presence of other visible facilities, such as buildings, or meter junction boxes on or adjacent to the Site and could be inferred from the Main or Trunkline shown on the Drawings.

2.1.5.3 *Notification*. If the Contractor, while performing Work under this Contract, discovers utility facilities not identified by the District in the Contract Documents. Contractor shall, within five (5) days, notify the District and the utility in writing. If Contractor fails to notify the District within forty eight hours after discovery of any utility facilities not identified by District in the

Contract Documents, Contractor waives all rights to be compensated for any extra Work or damages resulting from such discovered utilities.

2.1.6 Easements

District shall secure and pay for easements for permanent structures or permanent changes in existing facilities, if any, unless otherwise specified in the Contract Documents.

2.2 DISTRICT'S RIGHT TO CARRY OUT THE WORK DUE TO PARTIAL DEFAULT IN A SPECIFIC SEGREGATED AREA OF WORK (48 HOUR NOTICE TO CURE AND CORRECT)

If the Contractor Defaults or neglects to carry out the Work in accordance with the Contract Documents, the District may provide forty-eight (48) hour written notice to cure (a shorter period of time in the case of Emergency or a critical path delay as defined in Article 2.2.1) Contractor's Partial Default in a specific segregated area of work. The District's right to issue a Partial Default of the Contractor's Work and take over that segregated area of Work includes, but is not limited to:

1. Failure to supply adequate workers on the entire Project or any part thereof;
2. Failure to supply a sufficient quantity of materials;
3. Failure to perform any provision of this Contract;
4. Failure to comply with safety requirements, or due to Contractor is creation of an unsafe condition;
5. Cases of bona fide emergency;
6. Failure to order materials in a timely manner;
7. Failure to prepare Deferred Approval items or Shop Drawings in a timely manner;
8. Failure to comply with Contractor's Baseline or Update Schedule, meet critical Milestones which would result in a delay to the critical path, or delay the Contract Time;
9. Failure to comply with the Subletting and Subcontracting Fair Practices, Public Contract Code section 4100, et seq.
10. Failure to meet the requirements of the Americans with Disabilities Act;
11. Failure to complete Punch List work;
12. Failure to proceed on an Immediate Change Directive
13. Failure to correct a Notice of Deviation

If during the forty eight (48) hour period, the Contractor fails to Cure and correct the deficiency noted in the 48 hour notice of Partial Default with diligence and promptness, the District may correct such deficiencies without prejudice to other remedies the District may have, including a Termination for Cause as set forth in Article 14. If there are inadequate funds remaining the Project balance or in the Retention

Escrow to address at least 150% of the costs set forth in the Article 2.2 notice, the District may copy the Surety on the written notice of Partial Default. If a notice to the Surety is provided, except in the cases of emergency or critical path delay, the Surety has the option to take over and complete the Work described in the written notice if Surety personally delivers notice to District that it intends to perform such work. In the case where written notice has been provided, the District shall allow Surety seven (7) days to perform the Work.

2.2.1 Service of Notice of Partial Default with Right to Cure

A written notice of Partial Default and right to cure under Article 2.2 ("Article 2.2 Notice" or "Notice of Partial Default") shall be served by e-mail (with a copy provided by regular mail) to the e-mail address provided on the Bid submitted and copied to the Project Superintendent.

2.2.2 Shortened Time for Partial Default in the Case of Emergencies.

In an Emergency situation, the District may correct any of the deficiencies described in Article 2.2 without prejudice to other remedies by providing service of written notice of Emergency requiring a shortened time for Partial Default specifying the time given to cure, if any.

2.2.3 Shortened Time for Partial Default in the Case of Critical Path Delay

In the case of critical path delay, the District may correct any of the deficiencies described in Article 2.2 without prejudice to other remedies providing service of written notice of critical path delay to the Contractor with a specific description of the critical path delay items noting the line item or area of Work that is on the critical path and prescribe the length of shortened time to cure, if any.

2.2.4 Written Notice of Partial Default to be Deducted by Deductive Change Order

The District shall have the right to determine the reasonable value of the Article 2.2 Partial Default Work, or if there is an actual value for the Work, shall use that value and issue a Deductive Change Orders under Article 7.7.4.

ARTICLE 3
THE CONTRACTOR

3.1 SUPERVISION AND CONSTRUCTION PROCEDURES

3.1.1 Contractor

The Contractor shall continually supervise and direct the Work using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, procedures; and shall coordinate all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. The Contractor shall not perform the Work without utilizing the Contract Documents or, where required, approved Submittals, Shop Drawings, or samples for any such portion of the Work. If any of the Work is performed by contractors retained directly by the District, Contractor shall be responsible for the coordination and sequencing of the work of those other contractors so as to avoid any impact on the Project Schedule pursuant to the requirements of Article 6 and Article 8. Specific duties of the Contractor shall include those set out in Section 43 of Title 21 of the California Code of Regulations and Section 4-343 of Title 24 of the California Code of Regulations. These duties include, but are not limited to the following:

3.1.1.1 *Responsibilities*. It is the duty of the Contractor to complete the Work covered by his or her Contract in accordance with the approved Plans and Specifications. The Contractor in no way is relieved of any responsibility by the activities of the Architect, Engineer, Inspector or DSA in the performance of their duties.

3.1.1.2 Performance of the Work. The Contractor shall carefully study the approved Plans and Specifications and shall plan its schedule of operations well ahead of time. If at any time it is discovered that work is being done which is not in accordance with the approved Plans and Specifications, the Contractor shall correct the Work immediately.

3.1.2 Contractor Responsibility to Study the Plans and Specifications

All inconsistencies or timing or sequences which appear to be in error in the Plans and Specifications shall promptly be called to the attention of the Architect or, Engineer, for interpretation or correction. Local conditions which may affect the structure shall be brought to the Architect's attention at once. In no case, shall the instruction of the Architect be construed to cause work to be done which is not in conformity with the approved Plans, Specifications, change orders, construction change documents, and as required by law. (See Title 24, Section 4-343)

3.1.3 All Work Under the Direction of Inspector

Pursuant to Title 24 requirements, the Contractor shall not carry on Work except with the knowledge of the Inspector. (See Title 24 generally)

3.1.4 Contractor to Establish Timing and Protocol with Inspector

Contractor shall establish a protocol for requesting inspection with Inspector so as to not delay the Work and provide adequate time for the Inspector to perform inspection. If such a protocol is not established ahead of time, Inspector may utilize the time criteria set by Title 24 of 48 hours in advance of submitting form DSA 156 for each new area. DSA requirements under PR 13-01 specifically gives the

Special Inspector fourteen (14) days to post to the DSA website. Contractor is responsible for delays and for failure to plan.

For some Projects, there may be a need to incrementally install certain assemblies. It is up to Contractor to identify areas and assemblies that may be constructed incrementally. Contractor must identify and establish incremental areas of construction and establish protocols with Inspector for DSA 152 approvals so they may be presented to DSA. See PR-13 item 1.17 for further discussion.

3.1.5 Verified Reports

The Contractor shall make and submit to the office from time to time, verified reports as required in Title 24 Section 4-366. As part of the Close-Out of the Project (see Article 9.9), Contractor shall be required to execute a Form 6-C as required under Title 24 Sections 4-343.

Contractor shall fully comply with any and all reporting requirements of Education Code sections 17315, et seq., in the manner prescribed by Title 24, as applicable.

3.1.6 Contractor Responsibility

The Contractor shall be responsible to the District for acts and omissions of the Contractor's employees, Subcontractors, material and equipment suppliers, and their agents, employees, invitees, and other persons performing portions of the Work under direct or indirect contract with the Contractor or any of its Subcontractors.

3.1.7 Obligations not Changed by Architect's Actions

The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract or by tests, inspections, or approvals required or performed by persons other than the Contractor.

3.1.8 Acceptance/Approval of Work

The Contractor shall be responsible to determine when any completed portions of the Work already performed under this Contract or provided pursuant to Article 6 are suitable to receive subsequent Work thereon.

3.2 SUPERVISION

3.2.1 Full Time Supervision

Unless personally present on the Project site where the Work is being performed, the Contractor shall keep on the Work at all times during its progress a competent, English speaking construction Superintendent satisfactory to the District. The Superintendent shall be present on a full-time basis, shall be dedicated exclusively to the Project and shall not share superintendency duties with another project or job. The Superintendent shall not be replaced except with written consent of the District. The Superintendent shall represent the Contractor in its absence and shall be fully authorized to receive and fulfill any instruction from the Architect, the Inspector, the District or any other District Representative (including CM in the cases where the District has a CM representative). All Requests for Information shall be originated by the Superintendent and responses thereto shall be given to the Superintendent. No Work shall begin on any day by any Subcontractor or other person on the Project site until the Superintendent has

arrived, or shall any Work continue during the day after the Superintendent has departed from the Project site. The Superintendent shall have authority to bind Contractor through the Superintendent's acts. The Superintendent shall represent the Contractor, and communications given to the Superintendent shall be binding on the Contractor. Before commencing the Work, Contractor shall give written notice to District (and CM representative) and Architect of the name and a Statement of Qualifications of such superintendent. Superintendent shall not be changed except with written consent of District, unless a superintendent proves to be unsatisfactory to Contractor and ceases to be in its employ, in which case, Contractor shall notify District and Architect in writing. Contractor shall provide a replacement superintendent approved by the District prior to performing additional work.

3.2.2 Staff

Notwithstanding other requirements of the Contract Documents, the Contractor and each Subcontractor shall: (1) furnish a competent and adequate staff as necessary for the proper administration, coordination, supervision, and superintendence of its portion of the Work; (2) organize the procurement of all materials and equipment so that the materials and equipment will be available at the time they are needed for the Work; and (3) keep an adequate force of skilled and fit workers on the job to complete the Work in accordance with all requirements of the Contract Documents.

3.2.3 Right to Remove

District shall have the right, but not the obligation, to require the removal from the Project of any superintendent, staff member, agent, or employee of any Contractor, Subcontractor, material or equipment supplier.

3.3 LABOR AND MATERIALS

3.3.1 Contractor to Provide

Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, material, equipment, tools, construction equipment and machinery, water, heat, air conditioning, utilities, transportation, and other facilities, services and permits necessary for proper execution and completion of the Work whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

3.3.2 Quality

Unless otherwise specified, all materials and equipment to be permanently installed in the Project shall be new and shall be of the highest quality or as specifically stated in the Contract Documents. The Contractor shall, if requested, furnish satisfactory evidence as to kind and quality of all materials and equipment within ten (10) days of a written request by the District, including furnishing the District with bona fide copies of invoices for materials or services provided on the Project. All labor shall be performed by workers skilled in their respective trades, and shall be of the same or higher quality as with the standards of other school construction.

3.3.3 Replacement

Any work, materials, or equipment, which do not conform to these requirements or the standards set forth in the Contract Documents, may be disapproved by the District, in which case, they shall be removed and replaced by the Contractor at no additional cost or extension of time to the District.

3.3.4 Discipline

The Contractor shall enforce strict discipline and good order among the Contractor's and Subcontractor's employees, and other persons carrying out the Contract. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them. As used in this subsection, "unfit" includes any person who the District concludes is improperly skilled for the task assigned to that person, who fails to comply with the requirements of this article, or who creates safety hazards which jeopardize other persons and/or property.

3.3.5 Fingerprinting (Applicable at the time Project is Occupied and on all Projects where Workers will come in Contact with Pupils, such as Modernization Projects)

If applicable, Contractor shall comply with the applicable provisions of Education Code section 45125.1 in a method as determined by the District. Pursuant to Education Code section 45125.1, Contractor shall either conduct criminal background checks of all employees of Contractor assigned to the Project site, and shall certify that no employees who have been convicted of serious or violent felonies, as specified in Education Code section 45125.1, will have contact with pupils, by utilizing the Certification Regarding Background Checks and the corresponding Attachment "A" as found in the Contract Documents or shall be separated by a physical barrier from students.

If it is determined that Contractor must provide certification of employees, as part of such certification, Contractor must provide the District with a list of all employees providing services pursuant to this Agreement, and designate which sites such employees will be assigned. In performing the services set forth in this Agreement, Contractor shall not utilize any employees who are not included on the above-referenced list.

At District's sole discretion, District may make a finding, as authorized under Education Code section 45125.1, that Contractor's employees will have only "limited contact" with pupils. Contractor's failure to comply with this law shall be considered a material breach of this Agreement upon where this Agreement may be terminated, at District's sole discretion, without any further compensation to Contractor.

In the case of new construction Projects where there are no students, if the Project Schedule provides for Beneficial Occupancy or portions of the Project or if the Project should be delayed, then Contractor, at no additional costs, shall meet the requirements of either fingerprinting or providing a physical barrier as required by the District.

3.3.6 Noise, Drugs, Tobacco, and Alcohol

Contractor shall take all steps necessary to insure that employees of Contractor or any of its Subcontractors' employees do not use, consume, or work under the influence of any alcohol, tobacco or illegal drugs while on the Project. Contractor shall further prevent any of its employees or its Subcontractor employees from playing any recorded music devices or radios or wearing any radio headphone devices for entertainment while working on the Project. Likewise, Contractor shall prevent its employees or Subcontractor's employees from bringing any animal onto the Project. Contractors shall not violate any written school policies.

3.3.7 Delivery of Material

Contractor shall place orders for materials or equipment so that the Work may be completed in accordance with the Construction schedule for the Work as set forth in Article 8 of this

Agreement. Contractor shall, upon demand from the Architect, furnish to the Architect documentary evidence including, but not limited to purchase orders, invoices, bills of materials, work orders and bills of lading, showing that orders have been placed. Contractor shall have a system to receive materials and to ensure that the proper materials are being delivered, including in the case of critical materials to the Project, checking the delivery against Shop Drawings and ensuring that the materials meet the requirements of not only the Plans and Specifications, but also the approved Shop Drawings and Submittals and in conformance with Contractor's plan for delivery of materials (including but not limited to Contractor's representations in the Schedules for the Project and Contractor's equipment and materials schedule under Article 3.7.2.2). Contractor shall be responsible for all costs of accepting non-conforming materials delivered to the Project given Contractor's responsibilities and system for acceptance of deliveries. Contractor shall notify Inspector and District Representative (including CM) as early as possible, in writing, of the delivery of materials for the Project. The deliveries shall include documentation identifying the shipment sufficiently so that the Inspector, Architect or District Representative (including CM) may review the materials that are received. Under no circumstances shall materials be delivered to the Project site that are meant for another Project.

3.3.8 Liens and Other Security Interests of Subcontractors and Material Suppliers

No material, supplies, or equipment for the Work shall be purchased subject to any chattel mortgage or under a conditional sale or other agreement by which an interest therein or in any part thereof is retained by seller or supplier. Contractor warrants good title to all material, supplies, and equipment installed or incorporated in Work and agrees upon completion of all Work to deliver premises, together with all improvements and appurtenances constructed or placed thereon by it, to District free from any claims, security interests, liens, or charges. Contractor further agrees that neither it nor any person, firm, or corporation furnishing any materials or labor for any Work covered by this Contract shall have any right to place a lien upon the premises or any improvement or appurtenance thereof, except that Contractor may install metering devices or other equipment of a utility company or political subdivision, title to which is commonly retained by the utility company or political subdivision. In event of installation of any such metering device or equipment, Contractor shall advise District as to its owner within five (5) days of such installation in writing, prior to making the installation.

Contractor agrees to indemnify, defend and hold the District harmless from any liens, stop notices, or assertion of security interests, including judgments and levies. If after written notice Contractor fails to address the lien, stop notice, or other security interest, the District may proceed to address the lien, stop notice or claim and seek reimbursement from Contractor.

3.3.9 Title to Materials

The title to new materials or equipment for the Work of this Contract shall remain with Contractor until incorporated in the Work of this Contract until final acceptance of the Project; no part of said materials shall be removed from its place of storage, and Contractor shall keep an accurate inventory of all said materials and equipment in a manner satisfactory to the District or its authorized representative. Responsibility for materials remains with Contractor and Contractor shall replace materials in case of loss. District similarly may pay for materials stored off site, but Contractor shall remain responsible for the materials that are stored off site.

3.3.10 Assemblies

For all material and equipment specified or indicated in the Drawings, the Contractor shall provide all labor, materials, equipment, and services necessary, (including engineering as specifically required with Shop Drawings or Deferred Approvals) for complete assemblies and complete working

systems. Incidental items not indicated on the Drawings, nor mentioned in the Specifications, that can legitimately and reasonably be inferred to belong to the Work described, or be necessary in good practice to provide a complete assembly or system, shall be furnished as though itemized in the Contract Documents in every detail. In all instances, material and equipment shall be installed in strict accordance with each manufacturer's most recent published recommendations and Specifications.

3.3.11 Noise Control

The Contractor shall be responsible for the installation of noise reducing devices on construction equipment. Contractor shall comply with the requirements of the city and county having jurisdiction with regard to noise ordinances governing construction sites and activities. Construction equipment noise is subject to the control of the Environmental Protection Agency's Noise Control Program (Part 204 of Title 40, Code of Federal Regulations). If school is in session at any point during the progress of the Project, and, in the District's reasonable discretion, the noise from such Work disrupts or disturbs the students or faculty or the normal operation of the school, at the District's request, the Contractor shall schedule the performance of all such Work around normal school hours or make other arrangements so that the Work does not cause such disruption or disturbance. There are specific periods of testing at operational schools and it is critical that Contractor control noise during periods of testing. In no event shall Contractor have a right to receive additional compensation or an extension to the Contract time as a result of any such rescheduling or the making of such arrangements. These controls shall be implemented during site preparation and construction. All noise related issues, including school operations, and noise during testing should be detailed in the Schedule provided pursuant to Article 8

3.4 WARRANTY

The Contractor warrants to the District and Architect that material and equipment furnished under the Contract will be of the highest quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform with the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. Contractor's warranty to District includes, but is not limited to, the following representations:

3.4.1 In addition to any other warranties provided elsewhere, Contractor shall, and hereby does, warrant all Work after the date of Notice of Completion of Work by District and shall repair or replace any or all such Work, together with any other Work, which may be displaced in so doing that may prove defective in workmanship or materials within a two (2) year period from date of Final Completion which shall be no later than the final date of Punch List as noted at Article 9.11) without expense whatsoever to District, ordinary wear and tear, unusual abuse or neglect excepted. District will give notice of observed defects with reasonable promptness. Contractor shall notify District upon completion of repairs.

3.4.2 In the event of failure of Contractor to comply with above mentioned conditions within one week after being notified in writing, District is hereby authorized to proceed to have defects repaired and made good at expense of Contractor who hereby agrees to pay costs and charges therefore immediately on demand.

3.4.3 If, in the opinion of the District, defective Work creates a dangerous condition or requires immediate correction or attention to prevent further loss to the District, the District will attempt to give the notice required by this Article. If the Contractor cannot be contacted or does not comply with the District's requirements for correction within a reasonable time as determined by the District, the District may, notwithstanding the provisions of this article, proceed to make such correction or attention which shall

be charged against Contractor. Such action by the District will not relieve the Contractor of the guarantee provided in this Article or elsewhere in this Contract.

3.4.4 This Article does not in any way limit the guarantee on any items for which a longer warranty is specified or on any items for which a manufacturer gives a guarantee for a longer period. Contractor shall furnish District all appropriate guarantee or warranty certificates upon completion of the project.

3.5 TAXES

Contractor will pay all applicable Federal, State, and local taxes on all materials, labor, or services furnished by it, and all taxes arising out of its operations under the Contract Documents. District is exempt from Federal Excise Tax, and a Certificate of Exemption shall be provided upon request.

3.6 PERMITS, FEES AND NOTICES

3.6.1 Payment

The Contractor shall secure and pay for all permits and governmental fees, licenses, and inspections necessary for proper execution and completion of the Work which are necessary after execution of the Contract and are legally required by any authority having jurisdiction over the Project, except those required by the Division of the State Architect (DSA). District shall be responsible for all testing and inspection as required by the DSA on-site or within the distance limitations set forth in Article 13.5.2, unless a different mileage range is specified in the Supplemental Conditions.

3.6.1.1 *DSA Fees*. DSA policy is to charge CCD review fees for processing and approval of changes in the Plans and Specifications through the Construction Change Document process. Contractor is specifically directed to the current DSA IR A-30 which provides fee structure and charges that will be incurred for proceeding with respect to the CCD process, a process that must be followed for each change in the Plans and Specifications.

3.6.2 Compliance

The Contractor shall comply with and give notices required by any law, ordinance, rule, regulation, and lawful order of public authorities bearing on performance of the Work. Specifically, the Division of State Architect provides State oversight of the Project and enforcement of Title 24 rules and regulations. Contractor is directed to the DSA website. There will be local governmental oversight from City, County or both. Finally, Regional Water Quality Control Board, State Fire Marshall, local fire marshal, Department of Industrial Relations, Department of Labor Standards Enforcement, and Air Quality Management District (Local and State) are some of the agencies that provide oversight and may require specific permits, fees, or provide oversight over the Project. Contractor represents understanding and specialized knowledge of the rules governing school districts and Contractor shall maintain compliance over the applicable rules and will file all documents required in order to ensure compliance with State, local, and other rules that apply to the Project.

3.6.3 Responsibility

The Contractor shall perform all Work in conformance with every law, statute, ordinance, building code, rule or regulation. The Contractor shall assume full responsibility for such Work and shall bear the attributable cost of correction or project delay.

Pursuant to Title 24 Section 4-343(b):

> "Contractor shall carefully study the approved Plans and Specifications and shall plan a schedule of operations well ahead of time.... All inconsistencies or items which appear to be in error in the Plans and Specifications shall be promptly called to the attention of the architect or registered engineer, through the inspector, for interpretation or correction."

To help Contractor plan its operations, Contractor is directed to study the current version of the DSA 152 Inspection Card Manual identifying the exact steps the Inspector is to follow in the review and sign off process for the DSA 152. The DSA 152 Inspection Card Manual provides specific detail as to the order of operations, review items and compliance items beyond the Specifications and Plans which are reviewed for DSA compliance. The most current version of this manual is located on DSA's website.

Contractor is also specifically directed to the time periods for posting of Special Inspection Reports and Inspector Notifications under DSA PR 13-01 since the timing of Inspection is not a Governmental Entity related delay.

3.7 SUBMITTALS REQUIRED AT THE COMMENCEMENT OF THE PROJECT

3.7.1 Requirements Within Ten (10) Calendar Days

Within ten (10) calendar days after Notice to Proceed, Contract shall submit the following:

3.7.1.1 Detailed Schedule of Values (See Article 9.2)

3.7.1.2 Submittal Listing and Schedule for Submittals

3.7.1.3 Critical Path Baseline Schedule (See Article 8)

3.7.2 Requirements Within Thirty-Five (35) Calendar Days

Within thirty-five (35) calendar days after Notice to Proceed, Contractor shall submit the following:

3.7.2.1 *All Submittals for the Project* except those specifically agreed upon by District and Architect, in writing, and shall be specifically incorporated into the Submittal section of the Schedule so as to not delay the Work. The agreement to allow a later Submittal does not mean that Article 3.3.7 is waived. Contractor shall order materials and ensure prices are honored and secured for the Project.

a. Structural Steel may be included as a later Submittal than 35 days if Structural Steel is a significant portion of the Work, at least one or some of the Project is a structural steel structural system, or as specifically agreed upon by the Architect or District.

b. It is specifically agreed that submissions of structural steel Submittals shall not be piecemeal (unless some portion is requested separately by the District or Architect), shall provide complete designs, shall be stamped by the structural steel Subcontractor, Contractor, and structural steel Subcontractor's structural engineer at time of submission and as further addressed in Article 3.9.

c. In no case shall the submission of structural steel Drawings delay the critical path for the schedule. If a Milestone is provided for submission of complete structural steel Shop Drawings then the date shall be no later than as set forth in the Milestone

3.7.2.2 *Exceptions to Submittal Within Thirty-Five (35) Days by Written Agreement*. A written request detailing the specific reasons for a submission later than 35 days due to complexity of design or non-critical path status of the Submittal shall be submitted at the time the Baseline Schedule is submitted. The Baseline Schedule shall not include a delayed Submittal until written agreement is provided. In addition to the request for providing a Submittal after the thirty-five (35) day period, a copy of the Contract with the Subcontractor who shall be performing the Submittal, a written statement from the Subcontractor verifying that work has commenced on the Submittal and providing Subcontractor's own schedule of Milestones and completion dates, and a corresponding Submittal designation in the Schedule as required under Article 8. Approval of a delayed Submittal shall not result in any increase in the Contract Price or result in an extension of time for the completion of the Project.

3.7.2.3 *Piecemeal Submissions of Submittals*. Piecemeal Submittals mean providing portions of Shop Drawings or Submittals as they are being completed. The submission of piecemeal Submittals results in the appearance of a submission when there is inadequate information for the Architect or Engineer to adequately review a submission. Piecemeal differs from submission of complete buildings or phases of buildings or complete assemblies. The Architect may agree to allow submission of single buildings or areas as long as the Submittals are complete. .

3.8 DOCUMENTS, SAMPLES, AND COMPUTER AT THE SITE

The Contractor shall maintain at the Site for the District one current copy of the California Building Code, Titles 19 and 24 of the California Code of Regulations, any other document required by DSA, and one record copy of the Drawings, Specifications, Addenda, Change Orders, and other Modifications, in good order and marked currently to record changes and selections made during construction. In addition, the Contractor shall maintain at the Site approved Shop Drawings, Product Data, Samples, and similar required Submittals. These documents shall be available to the Architect and shall be delivered to the Architect for delivery to the District upon completion of the Work.

Contractor shall have an operational computer with internet access so Contractor can review and post documents as required for the Project, including but not limited to the filing and posting of DSA required documents for the Project.

Contractor shall be prepared to review documents posted to the DSA Project website.

3.9 SUBMITTALS INCLUDING SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

3.9.1 Definitions

3.9.1.1 *Deferred Approvals*. Approval of certain aspects of the construction may be deferred until the construction Contract has been awarded. To facilitate the design process, DSA grants Deferred Approval to the design and detailing of certain elements of the Project at the request of the Architect or Engineer of Record. Design elements that may be deferred may include, but are not limited to access floors, bleachers, elevator guide rails and related elevator systems, exterior wall systems - precast concrete, glass fiber reinforced concrete, etc., skylights, window wall systems, storefronts, stage rigging, and other systems as noted in the Contract Documents. (Also see Article 1.2.2 and 3.9.3)

3.9.1.2 *Shop Drawings.* The term "Shop Drawings" as used herein means Drawings, diagrams, equipment or product schedules, and other data, which are prepared by Contractor, Subcontractors, manufacturers, suppliers, or distributors illustrating some portion of the Work, and includes: illustrations; fabrication, erection, layout and setting Drawings; manufacturer's standard Drawings; schedules; descriptive literature, instructions, catalogs, and brochures; performance and test data including charts; wiring and control diagrams; and all other Drawings and descriptive data pertaining to materials, equipment, piping, duct and conduit systems, and methods of construction as may be required to show that the materials, equipment, or systems and their position conform to the requirements of the Contract Documents.

3.9.1.3 *Manufactured* applies to standard units usually mass-produced, and "Fabricated" means items specifically assembled or made out of selected materials to meet individual design requirements. Shop Drawings shall: establish the actual detail of all manufactured or Fabricated items, indicate proper relation to adjoining work, amplify design details of mechanical and electrical systems and equipment in proper relation to physical spaces in the structure, and incorporate minor changes of design or construction to suit actual conditions.

3.9.1.4 *Submittals* is a term used interchangeably and sometimes refers to Shop Drawings, Product Data, and samples since all Subcontractor submissions are tracked in a Submittal Log and may include any of the noted items. However, generally, a Submittal is a manufacturer's product information and Product Data including description, characteristics, size, physical characteristics, and requirements to prepare the jobsite for receiving of the particular manufactured item.

3.9.1.5 *Samples*. The term "samples" as used herein are physical examples furnished by Contractor to illustrate materials, equipment, or quality and includes natural materials, Fabricated items, equipment, devices, appliances, or parts thereof as called for in the Specifications, and any other samples as may be required by the Architect to determine whether the kind, quality, construction, finish, color, and other characteristics of the materials, etc., proposed by the Contractor conform to the required characteristics of the various parts of the Work. All Work shall be in accordance with the approved samples.

3.9.2 Shop Drawings.

3.9.2.1 *When Shop Drawings Are Required.* Shop Drawings are required for prefabricated components and for installation and coordination of these prefabricated components into the Project. In addition, Shop Drawings, are prepared to address the actual size and installation of components from various Subcontractors and provides an opportunity for the Contractor to coordinate and address conflicts between the subcontracting trades. In some cases, each Subcontractor or trade will provide Shop Drawings in a BIM format or other format as agreed by District.

3.9.2.2 *Purpose for Shop Drawings.* Shop Drawings are the Contractor's manufacturer, Subcontractor, supplier, vendor or the Contractor's detailed drawings showing particularized method for assembly, specifics to a manufacturer, manufacturer component installation requirements, specifics as to a manufactured item, alterations to a manufactured, a custom created item, or drawn version of more detailed information expanding on the Architect's design shown in the Contact Documents. The Shop Drawings address the appearance, performance, size, weight, characteristics and prescriptive descriptions associated with the Contractor or Contractor's Subcontractor's plan for installation or assembly based on the design in the Specifications and Contract Documents. The Shop Drawing often is more detailed than the information shown in the Contract Documents to give the Architect and Engineer the opportunity to review the fabricator's version of the product (along with particulars specific to that particular product), prior to fabrication. References to the Contract Documents, Construction Documents,

Drawings, Plans, and Specifications assist the Architect and Engineer in their review of the Shop Drawings. Attachment of manufacturer's material Specifications, "catalog cut sheets," and other manufacturer's information may be provided to accompany Shop Drawings. Because Shop Drawings facilitate the Architect's and Engineer's approval of the system, they should be as clear and complete as possible so they may be reviewed by Architect or Engineer for the Project.

3.9.2.3 *Shop Drawing Requirements.* The Contractor shall obtain and submit with Shop Drawings all seismic and other calculations and all Product Data from equipment manufacturers. "Product Data" as used herein are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate a material, product, or system for some portion of the Work.

3.9.2.4 *Not a Reproduction of Architectural or Engineering Drawings.* The Shop Drawings are not a reproduction of the architectural or engineering Drawings. Instead, they must show more detail than the Construction Documents and details the fabrication and/or installation of the items to the manufacturer's production crew or Contractor's installation crews.

3.9.2.5 *Shop Drawings Engineering Requirements*: Some Shop Drawings require an engineer stamp to be affixed on the Drawings and calculations. In such cases, a current and valid engineering stamp shall be affixed by a California registered engineer. No out of State engineers shall stamp Shop Drawings. (See DSA IR A-18). In most cases, an engineer means California registered mechanical, structural, electrical or plumbing engineer. California Registered Civil Engineers will not be accepted for structural details unless specifically approved by DSA.

3.9.2.6 *DSA Approvals Required Prior to Work*. No work on a Shop Drawing that requires DSA approval may proceed until DSA approval is received. Contractor has provided DSA approval time and allowed adequate time for corrections in Contractor's Schedule as required pursuant to Article 8.

3.9.2.7 *Shop Drawing Identification.* All Shop Drawings must be properly identified with the name of the Project and dated, and accompanied by a letter of transmittal referring to the name of the Project and to the Specification section number for identification of each item clearly stating in narrative form, as well as "clouding" all qualifications, departures, or deviations from the Contract Documents. Shop Drawings, for each section of the Work shall be numbered consecutively and the numbering system shall be retained throughout all revisions. All Subcontractor submissions shall be made through the Contractor. Each drawing shall have a clear space for the stamps of Architect and Contractor.

3.9.3 Deferred Approvals

Deferred approvals shall be submitted and processed to ensure all DSA and other governmental approvals are secured so as to not delay the Project. There may be additional requirements for Deferred Approvals at Division 1 of the Specifications. All Deferred Approvals shall be prepared by Contractor or Contractor's agent early enough so as to not delay the Project. Contractor is aware that Title 24 California Code of Regulations Section 4-317 have specific requirements for Deferred Approval as to governing agencies and as to the Architect and Engineer for the Project. As a result, any delay associated with the time for approval by applicable agencies or by the Architect or Architect's consultants shall be Contractor's. Contractor is required to comply with inclusion of Deferred Approvals in the Schedule as required under Article 3.9.6

3.9.3.1 *DSA Approvals Required Prior to Work.* No work on a Deferred Approval item may proceed on the components until DSA approval is received. Contractor has provided DSA

approval time and allowed adequate time for any DSA revisions in Contractor's Schedule as required pursuant to Article 8.

3.9.4 Submittals and Samples

3.9.4.1 *Information Required With Submittals*: Manufacturer, trade name, model or type number and quantities: Information provided must be of sufficient detail to allow Architect and Engineer to compare the submitted item with the specified products and acceptable products listed, in the Specifications and addenda.

3.9.4.2 *Description of Use and Performance Characteristics*: Information should be furnished describing the normal use and expected performance of the product. The Architect and Contractor review this information to confirm that the product is appropriate for the intended use.

3.9.4.3 *Size and Physical Characteristics:* The size and physical characteristics, such as adjustment capabilities, which is reviewed by both the Contractor and Architect. The Contractor has the most available information for comparing adjoining materials and equipment. The Contractor also needs to know the size and weight of the equipment for lifting and handling considerations.

3.9.4.4 *Finish Characteristics:* The Architect reviews the available finishes and selects the appropriate finish, if the finish was not previously specified in the documents. The Contractor should confirm that finish requirements in the Specifications are being met by the product.

3.9.4.5 *Contractor Responsible for Jobsite Dimensions*: Some material is custom-Fabricated to job conditions, requiring dimensions from the jobsite. These jobsite dimensions are provided by the Contractor as part of the Contractor's responsibilities for the Project and shall be provided prior to release of the product for manufacture. Contractor shall not rely on Architect or Engineers to provide jobsite dimensions.

3.9.4.6 *Full Range of Samples Required (When Specific Items Not Specified).* Except in cases where the exact color and type of item is specified since the District is utilizing items Standardized or pre-selected by District, the full range of color, graining, texture, or other characteristics are anticipated for review in finished products, a sufficient number of samples of the specified materials shall be furnished by the Contractor to indicate the full range of characteristics which will be present in the finished products. Products delivered or erected without Submittal and approval without providing a full range of samples shall be subject to rejection. Except for range samples, and unless otherwise called for in the various sections of the Specifications or Specification Section 1, samples shall be submitted in duplicate.

3.9.4.7 *Labeling of Samples.* All samples shall be marked, tagged, or otherwise properly identified with the name of the submitting party, the name of the Project, the purpose for which the samples are submitted and the date.

3.9.4.8 *Transmittal letter.* All samples shall be accompanied by a letter of transmittal containing similar information, together with the Specification section number.

3.9.4.9 *Labels and Instructions.* All samples of materials shall be supplied with the manufacturer's descriptive labels and application instructions. Each tag or sticker shall have clear space for the review stamps of Contractor and Architect.

3.9.4.10 *Architect's Review.* The Architect will review and, if appropriate, approve submissions and will return them to the Contractor with the Architect's stamp and signature applied thereto,

indicating the timing for review and appropriate action in compliance with the Architect's (or District's) standard procedures. In the cases where a CM is hired by the District, CM may be the party that receives and performance logging and initial processing of the Samples. CM may, in some cases, reject samples that are not in conformance with Contract requirements.

3.9.5 Submittal Submission Procedure

3.9.5.1 *Transmittal Letter and Other Requirements.* All Submittals must be properly identified with the name of the Project and dated, and each lot submitted must be accompanied by a letter of transmittal referring to the name of the Project and to the Specification section number for identification of each item clearly stating in narrative form, as well as "clouding" on the submissions, all qualifications, departures, or deviations from the Contract Documents. Shop Drawings, for each section of the Work shall be numbered consecutively and the numbering system shall be retained throughout all revisions. All Subcontractor submissions shall be made through the Contractor. Each drawing shall have a clear space for the stamps of Architect and Contractor. Refer to Division 1. In the case where a CM is hired on the Project, the CM may be designated to receive the Submittals for the Project, log the Submittals, and in some cases reject Submittals that do not conform to Contract requirements. Submittal Procedures for further information.

3.9.5.2 *Copies Required.* Each Submittal shall include one (1) legible, reproducible (if electronic is available, electronic copies shall also be provided) and five (5) legible prints of each drawing or schedule, table, cut sheet, etc., including fabrication, erection, layout and setting drawings, and such other drawings as required under the various sections of the Specifications, until final acceptance thereof is obtained. Subcontractor shall submit copies, in an amount as requested by the Contractor, of: (1) manufacturers' descriptive data for materials, equipment, and fixtures, including catalog sheets showing dimensions, performance, characteristics, and capacities; (2) wiring diagrams and controls; (3) schedules; (4) all seismic calculations and other calculations; and (5) other pertinent information as required by the District or Architect. See also Division 1.

3.9.5.3 *Corrections.* The Contractor shall make all corrections required by Architect, District or CM and shall resubmit, as required by Architect or CM, corrected copies of Shop Drawings or new samples until approved. Contractor shall direct specific attention in writing or on resubmitted Shop Drawings to revisions other than the corrections required by the Architect on previous submissions. Professional services required for more than one (1) re-review of required Submittals of Shop Drawings, Product Data, or samples are subject to charge to the Contractor pursuant to Article 4.5.

3.9.5.4 *Approval Prior to Commencement of Work.* No portion of the Work requiring a Shop Drawing or sample submission or other Submittal shall be commenced until the submission has been reviewed by Contractor and Architect (and CM, if applicable) and approved by Architect (and CM where applicable) unless specifically directed in writing by the Architect. All such portions of the Work shall be in accordance with approved Shop Drawings and samples.

3.9.5.5 *District's Property.* All Submittals, Shop Drawings, computer disks, BIM modeling information, clash checks, schedules, annotated Specifications, samples and other Submittals shall become the District's property upon receipt by the District or Architect.

3.9.6 Schedule Requirements for Submittals

Contractor shall obtain and shall submit all required Submittals (i.e. Shop Drawings, Deferred Approvals, Samples, etc.), in accordance with Contractor's "Schedule for Submission of Shop Drawings and Samples" as required in the scheduling portion of the General Conditions at Articles 8 and

the Specifications (as long as the Specifications do not conflict with General Conditions. In the case of conflict, the conflicting provision shall be controlled by the General Conditions and the remaining Specifications sections shall be interpreted as if the general conditions language is inserted) with such promptness as to cause no delay in its own Work or in that of any other contractor or subcontractor but in no event later than thirty five (35) days after the Notice to Proceed is issued except in the specific cases noted as an exception under Article 3.7.2.1. No extensions of time will be granted to Contractor or any Subcontractor because of its failure to have Shop Drawings and samples submitted in accordance with Division 1 and the Schedule. Each Subcontractor shall submit all Shop Drawings, samples, and manufacturer's descriptive data for the review of the District, the Contractor, and the Architect through the Contractor.

3.9.6.1 *Consideration of Schedule.* Contractor has considered lead times, DSA or other agency governmental review times, Architect or Engineer review times, manufacturing seasons, and specific long lead procurement concerns for all submittals for the Project.

3.9.7 General Submittal Requirements

3.9.7.1 *Contractor Submittal Representations and Coordination.* By submitting Shop Drawings, Product Data, samples, etc., the Contractor represents that it has determined and verified all materials, field measurements, catalog numbers, related field construction criteria, and other relevant data in connection with each such submission, and that it has checked, verified, and coordinated the information contained within such Submittals with the requirements of the Work and of the Contract Documents, including the construction schedule.

3.9.7.2 *Contractor Coordination.* Contractor shall stamp, sign, and date each Submittal indicating its representation that the Submittal meets all of the requirements of the Contract Documents and evidence Contractor's review through execution of the following stamp to be placed on each Shop Drawings:

> "[Contractor] has reviewed and approved the field dimensions and the construction criteria, and has also made written notation regarding any information in the Shop Drawings and Submittals that does not conform to the Contract Documents. This Shop Drawing or Submittal has been coordinated with all other Shop Drawings and Submittals received to date by me as Contractor and this duty of coordination has not been delegated to Subcontractors, material suppliers, the Architect, or the Engineers on this Project.
>
> _____
> Signature of Contractor and date

3.9.7.3 *No Deviation from Contract Documents.* The submission of the Shop Drawings, Product Data, samples, etc., shall not deviate from the *requirement*s of the Contract Documents including detailing and design intent which is specifically outlined in Contract Documents except as specifically authorized by the Architect or through an accepted substitution pursuant to Article 3.10.4. All deviations from the Contract Documents shall be narratively described in a transmittal accompanying the Shop Drawings. However, Shop Drawings shall not be used as a means of requesting a substitution, the procedure for which is defined in Article 3.10.4, "Substitutions."

3.9.7.4 *Contractor Responsibility for Shop Drawings Conformance to Contract Documents.* Review by District and Architect shall not relieve the Contractor or any Subcontractor from its responsibility in preparing and submitting proper Shop Drawings in accordance with the Contract Documents.

3.9.7.5 *Incomplete Submittals.* Any submission, which in Architect's opinion is incomplete, contains errors, or has been checked superficially, will be returned not reviewed by the Architect for resubmission by the Contractor. Refer to Submittal Procedures of the Specifications for additional information. The Contractor shall be responsible for any related delays and shall not be the basis for any Claim.

3.9.7.6 *Shop Drawings and Submittals Shall Not Be Used as a Method to Make a Substitution.* Shop Drawings and Submittals shall not be used as a means of requesting a substitution or to make changes in the Contract Documents. If changes are made to the Contract Documents through the Shop Drawings, the Architect shall have the right to reject the Submittal. If the Architect does not note the deviation from the approved Plans and Specifications, the Contractor is still responsible for the change and the Architect or the District may require the Shop Drawings be revised to properly reflect the approved Contract Documents. The Architect or District may also require that the Contractor bear all costs under Article 4.5 and consequential damages associated with a CCD to revise Plans and Specifications to accommodate the deviation from approved Plans and Specifications.

3.9.7.7 Extent of Review. In reviewing Shop Drawings, the Architect will not verify dimensions and field conditions. The Architect will review and approve Shop Drawings, Product Data, samples, etc., for aesthetics and for conformance with the design concept of the Work and the information in the Contract Documents. The Architect's review shall neither be construed as a complete check which relieves the Contractor, Subcontractor, manufacturer, fabricator, or supplier from responsibility for any deficiency that may exist or from any departures or deviations from the requirements of the Contract Documents unless the Contractor has, in writing, called the Architect's attention to the deviations at the time of submission. The Architect's review shall not relieve the Contractor or Subcontractors from responsibility for errors of any sort in Shop Drawings or schedules, for proper fitting of the Work, coordination of the differing Subcontractor trades and Shop Drawings and Work which is not indicated on the Shop Drawings at the time of submission of Shop Drawings. Contractor and Subcontractors shall be solely responsible for any quantities which may be shown on the Submittals or Contract Documents.

3.10 SUBSTITUTIONS

3.10.1 Definition

A Substitution is a change in product, material, equipment, or method of construction from those required by the Construction Documents proposed by the Contractor. For this Project, a Substitution is subject to the filing of a Substitution Request **no later than ten (10) days** prior to the date and time bids are due and meeting the requirements of this Article.

3.10.2 One Product Specified

Unless the Specifications state that no substitution is permitted, whenever the Contract Documents indicate any specific article, device, equipment, product, material, fixture, patented process, form, method, or type of construction or any specific name, make, trade name, or catalog number, with or without the words "or equal," such specification shall be deemed to be used for the purpose of facilitating description of the material, process, or article desired and shall be deemed to be followed by the words "or equal." Subject to the requirements of properly submitting a Substitution Request for as Addressed in Article 3.10.4, the Contractor may, unless otherwise stated, offer any material, process, article, etc., which shall be materially equal or better in every respect to that so indicated or specified ("Specified Item") and will completely accomplish the purpose of the Contract Documents.

3.10.3 Products Specified Which Are Commercially Unavailable

If the Contractor fails to make a request for substitutions for products, prior to the submission of its bid, and such products subsequently become commercially unavailable, the Contractor may request a substitution for such commercially unavailable item. The decision to grant this request is solely at the District's discretion. The written approval of the District, consistent with the procedure for Change Orders, shall be required for the use of a proposed substitute material. The District may condition its approval of the substitution upon the delivery to District of an extended warranty or other assurances of adequate performance of the substitution as well as an equitable deduction in the Contract Price should the substituted item cost less than the Specified Item. All risks of delay due the approval of a requested substitution by the DSA, or any other governmental agency having jurisdiction, shall be on the requesting party. All additional costs, DSA review costs, all procurement and construction delays, and all costs for review by the Architect or its consultants shall be the responsibility of the Contractor and will be deducted from Contractor's pay request.

3.10.4 Substitution Request Form

Requests for substitutions of products, materials, or processes in place of a Specified Item must be in writing to the Architect. **Such request by bidder must be received by the Architect no later than ten (10) days prior to the bid opening date,** except as provided for in Article 3.10.3.

The request for substitution must be accompanied by evidence as to whether the proposed substitution:

a. Is equal in quality/service/ability to the Specified Item;

b. Will entail no changes in detail, construction, and scheduling of related work;

c. Will be acceptable in consideration of the required design and artistic effect;

d. Will provide no cost disadvantage to the District;

e. Will require no excessive or more expensive maintenance, including adequacy and availability of replacement parts; and

f. Will required no change of the construction schedule.

Bidder shall provide with the request for substitution, any and all Drawings, Specifications, samples, performance data, calculations, and other information as may be required to assist the Architect and the District in determining whether the proposed substitution is acceptable. The burden of establishing these facts shall be upon the bidder.

After the District's receipt of such evidence by bidder, the District will make its final decision as to whether the bidder's request for Substitution for any Specified Items will be approved. The District shall have sole discretion in deciding as to whether a proposed request for Substitution is equal to or better than a Specified Item. Any request for Substitution which is approved by the District shall be documented and processed through an Addendum to the bid documents, published and distributed to all bidders no later than 72 hours prior to the bid due date and time.

If the Architect and District accept a proposed substitution, the Contractor agrees to pay for all DSA review costs, engineering and design services, including, without limitation, compensation to the Architect and affected engineers for their required time to process such substitution through the Division

of the State Architect, if required, and to make all changes and adjustments in materials or the work of all trades directly or indirectly affected by the substituted item or items at no cost to the District.

3.10.5 Substitution Requests After Bid

The District, in its sole discretion, may accept a request for substitution by the Contractor or may request Contractor substitute a specified item. Any substitutions requested after bids are opened shall be subject to the same conditions and requirements set forth in Article 3.10.4 above. If any substitutions, that in the District or Architect's determination, results in a credit to the District, the credit amount shall be agreed upon in writing, otherwise, the request for substitution shall be deemed denied.

3.11 INTEGRATION OF WORK

3.11.1 Scope

The Contractor shall be responsible for cutting, fitting, or patching to complete the Work and to make all parts fit together properly. Contractor shall be responsible for ensuring that all trades are coordinated and scheduled so as to ensure the timely and proper execution of the work. When modifying existing work or installing new Work adjacent to existing work, Contractor shall match, as closely as conditions of Site and materials will allow, the finishes, textures, and colors of the original work, refinishing existing work at no additional cost to District. All cost caused by defective or ill-timed work shall be borne by Contractor. Contractor shall be solely responsible for protecting existing work on adjacent properties and shall obtain all required permits for shoring and excavations near property lines.

3.11.2 Structural Members

New or existing structural members and elements, including reinforcing bars and seismic bracing, shall not be cut, bored, or drilled except by written authority of the Architect. Work done contrary to such authority is at the Contractor's risk and subject to replacement at its own expense without reimbursement under the Contract. Schedule delays resulting from Agency approvals for unauthorized work shall be the Contractor's responsibility.

3.11.3 Subsequent Removal

Permission to patch any areas or items of the Work shall not constitute a waiver of the District's or the Architect's right to require complete removal and replacement of the areas of items of the Work if, in the opinion of the Architect or the District, the patching does not satisfactorily restore quality and appearance of the Work or does not otherwise conform to the Contract Documents.

3.12 CLEANING UP

3.12.1 Contractor's Responsibility to Clean Up

Contractor at all times shall keep premises free from debris such as waste, dust, excess water, storm water runoffs, rubbish, and excess materials and equipment. Contractor shall not leave debris under, in, or about the premises, but shall promptly remove same from the premises and dispose of it in a lawful manner. Disposal receipts or dump tickets shall be furnished to the Architect within five (5) days of request.

Contractor shall remove rubbish and debris resulting from the Work on a daily basis. Contractor shall maintain the structures and Site in a clean and orderly condition at all times until acceptance

of the Project by the District. Contractor shall keep its access driveways and adjacent streets, sidewalks, gutters and drains free of rubbish, debris and excess water by cleaning and removal each day. All concrete, sidewalks, and paths of travel shall be broom cleaned daily.

3.12.2 General Final Clean-Up

Upon completion of Work, Contractor shall employ experience workers or professional cleaners for final cleaning. Clean each surface to the condition expected in a normal, commercial, building cleaning and maintenance program.

a. Clean interior and exterior of buildings, including fixtures, equipment, walls, floors, ceilings, roofs, window sills and ledges, horizontal projections, and any areas where debris has collected, so surfaces are free from foreign material or discoloration;

b. Clean the Project site. The grounds should be cleared of any Contractor equipment, raked clean of debris and trash removed. Sweep paved areas broom clean.

c. Repair or replace any damaged materials. Replace any chipped or broken glass.

d. Remove any and all stains.

e. Remove labels that aren't permanent labels.

f. Clean and polish all glass, plumbing fixtures, equipment, finish hardware and similar finish surfaces. Remove any glazing compounds

g. Remove temporary utilities, fencing, barricades, planking, sanitary facilities and similar temporary facilities from Site.

h. Remove temporary film that remains on any hardware, doors or other surfaces.

i. Seal the bottom and tops of all doors

3.12.3 Special Clean-Up.

In addition to the general cleaning, the following special cleaning shall be done at the completion of the Work in accordance with the Specifications including, but not limited to:

a. Remove putty stains from glazing, then wash and polish glazing.

b. Remove marks, stains, fingerprints and other soil or dirt from painted, stained or decorated work.

c. Remove temporary protection and clean and polish floors and waxed surfaces.

d. Clean and polish hardware and plumbing trim; remove stains, dust, dirt, plaster and paint

e. Wipe surfaces of mechanical and electrical equipment.

f. Remove spots, soil, plaster and paint from tile work, and wash tile.

g. Clean all fixtures and equipment, remove excess lubrication, clean light fixtures and lamps, polish metal surfaces.

h. Vacuum-clean carpeted surfaces.

i. Remove debris from roofs, down spout and drainage system.

3.12.4 Failure to Cleanup

If the Contractor fails to clean up as provided in the Contract Documents, the District may do so, and the cost thereof shall be the responsibility of the Contractor pursuant to Article 2.2 and seek a Deductive Change Order.

3.13 ACCESS TO WORK

The Contractor shall provide the District, the Architect, Engineers and the Inspector of Record, access to the Work in preparation and progress wherever located. Contractor shall provide safe and proper facilities for such access so that District's representatives may perform their functions.

CONTRACTOR IS AWARE THAT THIS CONTRACT MAY BE SPLIT INTO SEVERAL PHASES AS ADDRESSED IN ARTICLE 6.

3.13.1 Special Inspection, Inspections or Tests Out of State, Out of Country or Remote from Project

If Contractor has a Subcontractor or supplier that requires in plant or special inspections or inspections or tests that are out of the country, out of the state, or a distance of more than 200 miles from the Project site, the Special Inspector or Inspector shall be provided access so the special inspection or inspection may occur in the remote location. In some cases, the DSA Inspector may also require access in addition to Special Inspectors and individuals performing tests. Inspections/tests shall occur during normal work hours. See also Article 4.3.6.

3.14 ROYALTIES AND PATENTS

3.14.1 Payment and Indemnity for Infringement

Contractor shall hold and save the District and its officers, agents, and employees, the Construction Manager, the Architect, and the Architect's consultants harmless from liability of any nature or kind, including cost and expense, for or on account of any patented or unpatented invention, process, article, or appliance manufactured or used in the performance of the Contract, including its use by the District, unless otherwise specifically provided in the Contract Documents, and unless such liability arises from the sole negligence, or active negligence, or willful misconduct of the District, the Architect, or the Architect's consultants.

3.14.2 Review

The review by the Architect of any method of construction, invention, appliance, process, article, device, or material of any kind shall be for its adequacy for the Work and shall not be an approval for the use by the Contractor in violation of any patent or other rights of any person or entity.

3.15 INDEMNIFICATION

3.15.1 Contractor

See Agreement Form. Contractor shall ensure that its contract with each of its Subcontractors contains provisions requiring the Subcontractors to defend, indemnify and hold harmless the District, Architect, Inspector, the State of California to a minimum level as set forth in this Article and consistent with the indemnity and hold harmless language in the Agreement Form.

The Contractor's and Subcontractors' obligation to defend, indemnify and hold harmless the District, Architect, Inspector, the State of California and their officers, employees, agents and independent contractors hereunder shall include, without limitation, any and all claims, damages, and costs for the following: (1) any damages or injury to or death of any person, and damage or injury to, loss (including theft), or loss of use of, any property; (2) breach of any warranty, express or implied; (3) failure of the Contractor or Subcontractors to comply with any applicable governmental law, rule, regulation, or other requirement; (4) products installed in or used in connection with the Work; and (5) any claims of violation of the Americans with Disabilities Act ("ADA")

3.16 SUBMISSION OF DAILY REPORTS

3.16.1 General

By 10:00 a.m. on the following business day, the Contractor shall submit a Daily Report to the Inspector and copy the Architect for the previous day's Work. If there is a Construction Manager, the original Daily Report is to be provided to the Construction Manager and copies sent to the Architect and the Inspector. Daily Reports shall be prepared on forms approved by the District, together with applicable delivery tickets, listing all labor, materials, and equipment involved for that day. The District reserves the right to note inconsistencies or inaccuracies in the Daily Reports. In such cases, pertinent notes shall be entered by each party to explain points which cannot be resolved that day. Each party shall retain a signed copy of the report. Daily Reports by Subcontractors or others shall be submitted through the Contractor.

3.16.2 Labor

The Daily Report shall show names of workers, classifications, hours worked and hourly rate. The locations where work occurred shall also be identified in the Daily Report. Project superintendent expenses are not allowed.

3.16.3 Materials

The Daily Report required shall describe and list quantities of materials used and unit costs.

3.16.4 Equipment

The Daily Report required shall show type of equipment, size, identification number, and hours of operation, including loading and transportation, if applicable, and hourly/daily cost. Move-on and move-off fees shall be noted.

3.16.5 Other Services and Expenditures

Other services and expenditures shall be described in the Daily Report in detail as the District requires.

3.16.6 Failure to Submit Daily Report

If Contractor does not submit its Daily Report by 10 am the next business day, the Inspector of Record shall prepare a Daily Report addressing each of the above items. The cost for the Inspector's services to prepare the Daily Report shall be addressed through a Deductive Change Order under Article 7.7.4.

3.17 AS-BUILT DRAWINGS AND ANNOTATED SPECIFICATIONS

Throughout the duration of the Project, Contractor shall maintain on a current basis an accurate and complete set of As-Built Drawings (and Annotated Specifications) clearly showing all changes, revisions to Specifications and substitutions during construction, including, without limitation, field changes and the final location of all electrical and mechanical equipment, utility lines, ducts, outlets, structural members, walls, partitions, and other significant features. In case a Specification 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. The Contractor will update the As-Built Drawings and Annotated Specifications as often as necessary to keep them current, but no less often than weekly.

Contractor shall update As-Built Drawings with complete information on an area of Work at or near the time when the Work is being performed and prior to any DSA 152 sign off and prior to any Work being covered.

The As-Built Drawings and Annotated Specifications shall be kept at the Site and available for review and inspection by the District and the Architect. Failure to maintain and update the As-Built Drawings is a basis to withhold Progress Payments pursuant to Article 9.6.

3.17.1 Upon Beneficial Occupancy

Contractor shall obtain and pay for reproducible Plans upon Beneficial Occupancy. Contractor shall deliver Plans to District Representative (Construction Manager if one is hired for the Project).

3.17.2 As-Builts at Completion of Work

Upon completion of the Work and prior to and as a condition precedent to Application for Retention Payment, the Contractor will provide one neatly prepared and complete set of As-Built Drawings and Annotated Specifications to the District. Contractor shall certify the As-Builts as a complete and accurate reflection of the actual construction conditions of the Work by affixing a stamp indicating the Drawings are As-Builts and certifying accuracy on the final set of As-Builts. Failure to deliver a complete As-Built set of Drawings may result in significant withholdings to ensure Work is properly documented. See Article 9.9.1.

3.17.3 Log of Control and Survey Documentation

Contractor shall complete and maintain an accurate log or all control and survey documentation for the Project as the Work progresses. All reference and control points shall be recorded on the As-Built Drawings. The basis of elevations shall be one of the established benchmarks that must be maintained on the As-Builts.

3.17.4 Record Coordinates for Key Items

Contractor shall record, by coordinates, all utilities on-site with top of pipe elevations, major grade and alignment changes, rim, grate or top of curb and flow line elevations of all drainage structures and sewer manholes. Contractor shall update record information at or near the time when work is occurring in an area and prior to DSA 152 sign off on any category of Work and prior to covering the Work.

3.17.5 BIM As-Built Drawings

If BIM is utilized for the Project, then an electronic version of such As-Built Drawings and Annotated Specifications will be delivered to District (in an acceptable format to District).

3.18 EQUIPMENT MANUALS

Contractor shall obtain and furnish three (3) complete sets of manuals containing the manufacturers' instructions for maintenance and operation of each item of equipment and apparatus furnished under the Contract Documents and any additional data specifically requested under the various sections of the Specifications for each division of the Work. The manuals shall be arranged in logical, sequential order, labeled, indexed, and placed in three-ring binders. At the completion of its Work, the Contractor shall certify, by endorsement thereon, that each of the manuals is complete, accurate, and covers all of its Work. Prior to submittal of Contractor's Application for Retention Payment, and as a further condition to its approval by the Architect, each Subcontractor shall deliver the manuals, arranged in logical, sequential order, labeled, indexed, endorsed, and placed in three-ring binders, to the Contractor, who shall assemble these manuals for all divisions of the Work, review them for completeness, and submit them to the District through the Architect.

ARTICLE 4
ADMINISTRATION OF THE CONTRACT AND CLAIMS

4.1 ARCHITECT

4.1.1 Replacement of Architect

In the case of the termination of the Architect, the District may appoint an Architect or another construction professional or may perform such functions with its own licensed professional personnel. The status of the replacement Architect under the Contract Documents shall be the same as that of the former Architect.

4.2 ARCHITECT'S ADMINISTRATION OF THE CONTRACT

4.2.1 Status

Pursuant to Titles 2 of the California Code of Regulations and as required pursuant to the Field Act, Education Code 17280 et seq., the Architect will provide administration of the Contract Documents and the Work, and will be the District's representative during construction, as well as during the one (1) year period following the commencement of any warranties. The Architect will have authority to act on behalf of the District only to the extent provided in the Contract Documents.

4.2.2 Site Visits

The Architect will visit the Site at intervals necessary in the judgment of the Architect to become generally familiar with the progress and quality of the Work and to determine in general if the Work is being performed in accordance with the Contract Documents and as otherwise required by DSA.

4.2.3 Limitations of Construction Responsibility

The Architect, District and CM shall not have control over, charge of, or be responsible for construction means, methods, techniques, schedules, sequences or procedures, fabrication, procurement, shipment, delivery, receipt, installation, or for safety precautions and programs in connection with the Work, since these are solely the Contractor's responsibility under the Contract Documents. The Architect, District and CM shall not be responsible for the Contractor's, Subcontractors', material or equipment suppliers', or any other person's schedules or failure to carry out the Work in accordance with the Contract Documents. The Architect, District and CM shall not have control over or charge of acts or omissions of the Contractor, Subcontractors, their agents or employees, or any other persons or entities performing or supplying portions of the Work. The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect, District or CM in the Architect, District or CM's administration of the Contract Documents, or by tests, inspections, or approvals required or performed by persons other than the Contractor.

4.2.4 Communications Facilitating Contract Administration

Except where a CM is on the Project, or as otherwise provided in the Contract Documents or when direct communications are warranted by special circumstances, the District and the Contractor shall communicate through the Architect. In the cases where a CM is hired for the Project, all communication shall be through the CM (unless otherwise directed) with copies to the District, Architect and Inspector. Where direct communication is necessary between the District and the Contractor, the

District's communication shall be through the District's authorized designated person. The Architect and CM shall be promptly informed, and shall receive copies of all written communications. Contractor shall not rely upon any communications from the District that is not from the District's Representative. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material or equipment suppliers shall be through the Contractor. In the case where a CM is hired for the Project, the CM shall be the main point of contact for communication of information. Copies should be sent to the Architect, District Representative and Inspector.

4.2.5 Payment Applications

The Architect will review and make recommendations to the District regarding the amounts due the Contractor on the Certificates for Payment pursuant to Article 9.3.4 and subject to the Inspector's review, (CM review, if applicable) and Architect's observation. This review of Payment Applications is sometimes called a "Pencil Draft." Return of a Pencil Draft shall constitute the District's dispute of the Payment Application that has been submitted. Contractor shall promptly respond to Pencil Drafts or Contractor's Payment Applications may be delayed. Contractor's failure to promptly respond to a Pencil Draft shall qualify as a delay in the Prompt Payment of a Request for Payment or Request for Retention.

4.2.6 Rejection of Work

In addition to the rights, duties, and obligations of the Inspector under this Article, the Architect may recommend to the District that the District reject Work which does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable to achieve the intent of the Contract Documents, the Architect (and/or CM) may recommend to the District that the District require additional inspection or testing of the Work in accordance with Article 13.5, whether or not such Work is Fabricated, installed, or completed. District may have Non-conforming Work removed and replaced pursuant to Article 9.7. However, neither this authority of the Architect (or CM) nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect (or CM) to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons performing portions of the Work.

Contractor shall, without charge, replace or correct Work found by the District to not be in conformance to Contract requirements. Contractor shall promptly segregate and remove rejected materials from the Project site.

This section is does not address a Notice of Non-Compliance and the remedies associated with a Notice of Non-Compliance which are addressed at Article 7.1.2.

4.2.7 Warranties upon Completion

The Architect (and where applicable CM), in conjunction with the Inspector will conduct field reviews of the Work to determine the date of Substantial Completion and of Final Completion, shall receive and forward to the District for the District's review written warranties and related documents required by the Contract and assembled by the Contractor, and will issue a final Certificate for Payment when the Architect believes the Work has been completed in compliance with the requirements of the Contract Documents (See Article 9.11 for Close-Out). The handling by the Architect (or where applicable CM) of such warranties, maintenance manuals, or similar documents shall not diminish or transfer to the Architect any responsibilities or liabilities required by the Contract Documents of the Contractor or other entities, parties, or persons performing or supplying the Work.

On some Projects, the District will take a phased occupancy of the Project. In those cases, the District may commence the running of warranties on the buildings, or phases that are accepted after Punch List is completed and the District has accepted Completion of the separate phase. A separate Notice of Completion may be filed for the separate building or phase of work and warranties shall commence for the separate phase only to the extent that warranties do not require coordination or connection to other buildings or other parts of the site and only if the warranted item is completed to its entirety in the segregated building or phased area.

If written warranties are not provided at the time the Punch List is nearing completion, Architect (with recommendations from the CM and Inspector) shall determine the dollar value of the warranties and shall make recommendation for withholds necessary transfer such Warranty to the District for future use as part of the Punch List for the Project pursuant to Article 9.6.

Warranties are not commenced through utilizing of equipment for testing and operation as necessary to acclimate buildings or where necessary to test systems.

4.2.8 Interpretation

The Architect will interpret and decide matters concerning performance and requirements of the Contract Documents. Architect shall make clarifications as necessary to interpret the Contract Documents.

4.3 PROJECT INSPECTOR

4.3.1 General

One or more Project Inspectors employed by the District and approved by the Division of the State Architect will be assigned to the Work in accordance with the requirements of Title 24 of the California Code of Regulations. The Inspector(s) duties are as specifically defined in Title 24 Section 4-333 and 4-342 and in DSA IR A-8.

4.3.2 Inspector's Duties and DSA Noted Timelines for Inspection

All Work shall be under the observation of the Inspector. Contractor shall establish a protocol for requesting inspection with Inspector so as to not delay the Work and provide adequate time for the Inspector to perform inspection. If such a protocol is not established ahead of time, Inspector may utilize the time criteria set by Title 24 of 48 hours in advance of submitting form DSA 156 for each new area. The Inspector shall have free access to any or all parts of the Work at any time. The Contractor shall furnish the Inspector such information as may be necessary to keep the Inspector fully informed regarding progress and manner of Work and character of materials. Such observations shall not, in any way, relieve the Contractor from responsibility for full compliance with all terms and conditions of the Contract, or be construed to lessen to any degree the Contractor's responsibility for providing efficient and capable superintendence. The Inspector is not authorized to make changes in the Drawings or Specifications nor shall the Inspector's approval of the Work and methods relieve the Contractor of responsibility for the correction of subsequently discovered defects, or from its obligation to comply with the Contract Documents.

Inspector shall electronically post DSA required documents on the DSA electronic posting website. It is the Contractor's responsibility to determine the status of posting and determine if all the criteria for sign off of a category of Work on the Project Inspection Card (Form DSA 152) as defined more thoroughly in the most current version of the DSA 152 manual posted on the DSA website.

Inspector may collaborate with Contractor about approval of areas that may be constructed and approved incrementally under the DSA 152 card pursuant to the guidelines of PR-13 at Article 1.17. Inspector shall work with Contractor to present incremental approval proposals to DSA.

4.3.3 Inspector's Authority to Reject or Stop Work

The Inspector shall have the authority to reject Work whenever provisions of the Contract Documents are not being complied with, and Contractor shall instruct its Subcontractors and employees accordingly. In addition, the Inspector may stop any Work that poses a probable risk of harm to persons or property. The Contractor shall instruct its employees, Subcontractors, material and equipment suppliers, etc., accordingly. The absence of any Stop Work Order or rejection of any portion of the Work shall not relieve the Contractor from any of its obligations pursuant to the Contract Documents.

4.3.4 Inspector's Facilities

Within seven (7) days after the notice to proceed, the Contractor shall provide the Inspector with the temporary facilities as required. More specific requirements for the Inspector facilities may be further described under Division 1 of the Specifications.

4.3.5 Testing Times

The District will provide inspection and testing at its cost during the normal eight (8) hour day Monday through Friday (except holidays). Work by the Contractor outside of the normal eight (8) hour day shall constitute an authorization from the Contractor to the District to provide inspection and testing as required outside of the normal eight (8) hour day. Contractor shall provide adequate time for inspections so as to not delay the Work. An advanced timing protocol may be established pursuant to Article 4.3.2. If the Contractor is behind Schedule then it is incumbent on the Contractor to provide advance forecast through look ahead of the anticipated date for inspection so the Inspector may plan their activities so as to not delay the Project. Contractor shall reimburse District for any additional costs associated with inspection and testing (including re-inspection and re-testing) outside the normal eight-hour day and for any retests caused by the Contractor.

It is the Contractor's responsibility to request special inspections with sufficient time so all testing may be timely completed and posted so work may proceed and the Inspector's signature is attached to the Project Inspection Card (Form 152). Specifically, timely request for special inspection under the DSA Verified Report Forms 291 (laboratory), DSA Verified Report Form 292 (Special Inspection), and DSA Verified Report 293 (geotechnical) since DSA requirements under PR 13-01 specifically gives the Special Inspections 14 days to post to the DSA website. Failure to plan and pay (if applicable) for quicker delivery of Special Inspections may be counted as Float, but is not considered Governmental Delay Float under Article 8.1.4.

4.3.6 Special Inspections, Inspections or Tests Out of State, Out of Country or Remote from Project

If Contractor has a Subcontractor or supplier that requires in plant or special inspections, inspections or tests that are out of the country, out of the state or a distance of more than 200 miles from the Project Site, the District shall provide the Special Inspector or individual performing tests time for inspection and testing during normal work hours. Contractor, however, is responsible for the cost of travel, housing, food, out of area premiums that may be in the Inspector/Testing Agreement with District, or other expenses necessary to ensure proper inspection, special inspection or testing is provided by a DSA Certified Inspector, Special Inspector, or individual performing tests. In some cases all three (DSA Inspector, Special

Inspector, and Tester) may be required. In addition, if the DSA Certified Inspector, Special Inspector, or individual performing test has contractual travel clauses or special rates for out of town inspection, Contractor is responsible for all costs associated with the contractual travel costs in addition to all other costs. Arrangements for inspection and/or testing shall be made far enough in advance so as to not delay the Work.

4.4 STOP WORK ORDER

DSA may issue a Stop Work Order, or an Order to Comply, when either (1) the Work proceeds without DSA approval; (2) the Work proceeds without a DSA Inspector of Record, or (3) where DSA determines that the Work is not being performed in accordance with applicable rules and regulations, and would compromise the structural integrity of the Project or would endanger lives. If a Stop Work Order is issued, the Work in the affected area shall cease until DSA withdraws the Stop Work Order. Pursuant to Education Code section 17307.5(b), the District shall not be held liable in any action filed against the District for any delays caused by compliance with the Stop Work Order, except to the extent that an error or omission by the District is the basis for the issuance of the Stop Work Order.

Examples of Stop Work Orders that may be issued by DSA include DSA Bulletin 07-04 and Policy 10-01, the installation of automatic fire sprinkler systems without approved Plans, covering Work that has not been approved by Inspector on DSA Project Inspection Card (Form 152).

4.5 RESPONSIBILITY FOR ADDITIONAL CHARGES INCURRED BY THE DISTRICT FOR PROFESSIONAL SERVICES

If at any time prior to the completion of the requirements under the Contract Documents, the District is required to provide or secure additional professional services (including CM, Inspection, Architect, Engineering and Special Consultant Services) for any reason by any act of the Contractor, the District may seek a Deductive Change Order for any costs incurred for any such additional services, which costs shall be deducted from the next progress payment. A Deductive Change Order shall be independent from any other District remedies and shall not be considered a waiver of any District rights or remedies. If payments then or thereafter due to the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the District. Additional services shall include, but shall not be limited to, the following:

a. Services made necessary by the default of the Contractor (Article 14 or Article 2.2).

b. Services made necessary due to the defects or deficiencies in the Work of the Contractor (Article 2.2 and Article 9.6).

c. Spurious or frivolous RFI's issued that do not conform to the requirements of Article 7.4. Issuance of the same RFI after receiving an answer from the Architect or Engineer

d. Review of Schedules that are provided by Contractor that do not Conform with the Requirements of Article 8.

e. Preparation of a CCD or ICD to correct a Contractor Deficiency, or Contractor Caused Notice of Non-Compliance (Article 7.3).

f. Review of Incomplete Shop Drawings or Submittals, including the submission of Piecemeal Shop Drawings or Submittals unless piecemeal Submittals are specifically agreed upon by District (Article 3.9)

g. Services required by failure of the Contractor to perform according to any provision of the Contract Documents.

h. Services in connection with evaluating substitutions of products, materials, equipment, Subcontractors' proposed by the Contractor, and making subsequent revisions to Drawings, Specifications, obtaining DSA approvals, DSA costs for review of CCD's, other governmental agency review costs, and providing other documentation required (except for the situation where the specified item is no longer manufactured or available). (Article 3.10)

i. Services for evaluating and processing Claims or Disputes submitted by the Contractor in connection with the Work outside the established Change Order process.

j. Services required by the failure of the Contractor to prosecute the Work in a timely manner in compliance within the specified time of completion.

k. Services in conjunction with the testing, adjusting, balancing and start-up of equipment other than the normal amount customarily associated for the type of Work involved.

l. Services in conjunction with more than one (1) re-review of Submittals of Shop Drawings, Product Data, samples, RFI's etc.

4.6 DISPUTES AND CLAIMS

4.6.1 Decision of Architect

Disputes between District and Contractor involving money or time, including those alleging an error or omission by the Architect shall be referred initially to the Architect for action as provided in Article 4.6.2 within ten (10) days after Contractor's Article 7 request for Change is denied. If there is a CM, the CM shall receive the Dispute and may review and also assemble opinions and documents to assist the Architect. A decision by the Architect, as provided in Article 4.6.5, shall be required as a condition precedent to proceeding with remedies set forth in Article 4.6.9 as to all such matters arising prior to the date Retention Payment Application is due, regardless of whether such matters relate to execution and progress of the Work, or the extent to which the Work has reached Final Completion.

The condition precedent of an Architect decision shall be waived if: (1) the position of Architect is vacant; (2) the Architect has not received evidence or has failed to render a decision within agreed time limit; (3) the Architect has failed to take action required under Article 4.6.5 within thirty (30) days after the Claim is made, forty-five (45) days have passed after the Claim has been referred to the Architect; or (4) the Claim relates to a stop notice claim not arising from any extra Change Order or Immediate Change Directive for which approval has not been provided.

4.6.2 Architect's Review

The Architect (and CM) will review Disputes and take one or more of the following preliminary actions upon receipt of a Dispute: (1) request additional supporting data from the claimant; (2) submit a schedule to the parties indicating when the Architect expects to take action; (3) reject the Dispute in whole or in part, stating reasons for rejection; (4) recommend approval of the Claim; or (5) suggest a compromise. The Architect may also, but is not obligated to, notify the Surety, if any, of the nature and amount of the Claim.

4.6.2.1 *Architectural Immunity*. Architect review of Claims shall be impartial and meant to resolve Disputes. Pursuant to the case, Huber, Hunt & Nichols, Inc. v. Moore (1977) 67 Cal.App.3d 278, the Architect is provided a quasi-judicial immunity for interpreting and deciding Disputes between the District and Contractor.

4.6.3 Documentation if Resolved

If a Dispute has been resolved, the Architect (and/or CM) will prepare a Change Order or obtain appropriate documentation to document the terms for Board approval.

4.6.4 Actions if Not Resolved

If a Dispute has not been resolved and all documentation requested pursuant to Article 4.6.2 has been provided, the Contractor shall, within ten (10) days after the Architect's preliminary response, assemble all the documents involved in the Dispute including copies of all back-up documentation of costs and the basis for the Dispute and take one or more of the following actions: (1) modify the initial Dispute; (2) notify the Architect that the initial Dispute stands; or (3) supplement with additional supporting data and re-submit to the Architect under Article 4.6.2.

4.6.5 Architect's Written Decision

If a Dispute has not been resolved after consideration of the foregoing and of other evidence presented by the parties or requested by the Architect, the Architect (or Architect through CM) shall provide a written decision twenty (20) days after compliance with Article 4.6.4. Upon expiration of such time period, the Architect (or Architect through CM) will render to the parties its written decision relative to the Dispute, including any change in the Contract Sum or Contract Time or both.

The Architect may also request reasonable additional time to complete Architect's written decision.

If the resolution of the Dispute by the Architect is not satisfactory to the Contractor and copies of all back-up documentation of costs and the basis for the Dispute is fully articulated in a package of material that is complete, the Contractor may then submit a Claim to the District under Article 4.6.9

4.6.6 Continuing Contract Performance

Pending final resolution of a Dispute or Claim, including, negotiation, mediation, arbitration, or litigation, the Contractor shall proceed diligently with performance of the Contract, and the District shall continue to make any undisputed payments in accordance with the Contract (less any withholdings or offsets). If the Dispute or Claim is not resolved, Contractor agrees it will neither rescind the Contract nor stop the progress of the work, but Contractor's sole remedy shall be to submit such controversy to determination by a court of competent jurisdiction in the county where the Project is located, after the Project has been completed, and not before.

4.6.6.1 *District's Option to Submit Individual Disputes to Arbitration during Claims and Disputes Process*. At the District's sole option, in order to more efficiently resolve Claims during the Project and prior to the completion of the Claims Process, pursuant to Government Code section 9201, the District may submit individual Disputes or Claims for binding arbitration and Contractor agrees to the resolution of for each individual Dispute or Claim by an Arbitrator, including resolution of time and delays. If binding arbitration is utilized for individual disputes, such resolution is full and final as to that particular Dispute or Claim. THIS INDIVIDUAL DISPUTE ARBITRATION PROCESS IS NOT AN

ARBITRATION CLAUSE AND SHALL NOT BE CONSTRUED AS AN AGREEMENT TO ARBITRATE. THIS INDIVIDUAL DISPUTES ARBITRATION PROCESS IS FOR THE SOLE PURPOSE OF STREAMLINING AND RESOLVING CLAIMS DURING CONSTRUCTION AND SHALL BE REQUESTED ON SPECIFIC INDIVIDUAL ITEMS BY THE DISTRICT PRIOR TO RETENTION PAYMENT (EVEN IF THERE ARE DEDUCTIONS MADE FROM RETENTION PAYMENT) WHICH REPRESENTS THE FINAL COMPLETION OF THE PROJECT.

a. If there is no Retention remaining on the Project, individual Disputes initiated prior to Project Final Completion shall continue until a final disposition of the Arbitration or resolution of the individual Claim or Dispute.

b. No Tolling. The Arbitration process shall not toll the Disputes, Claims, or Appeals process under Article 4.6 or the requirement to submit Claims to Court under Article 4.6.9.4.

4.6.7 Claims for Concealed Trenches or Excavations Greater Than Four Feet Below the Surface

When any excavation or trenching extends greater than four feet below the surface or if any condition involving hazardous substances are encountered:

a. Immediately upon discovery, The Contractor shall promptly, and before the following conditions are disturbed, notify the District, by telephone and in writing, of the condition except:

1. If such condition is a hazardous waste condition, Contractor's bid includes removal or disposal of hazardous substances. Material that the Contractor believes may be a material that is hazardous waste, as defined in Section 25117 of the Health and Safety Code, is required to be removed to a Class I, Class II, or Class III disposal site in accordance with the provisions of existing law. In such case, the notice bulletin procedures of Article 7 apply.

2. Subsurface or latent physical conditions at the Site differing from those indicated in the Drawings, Specifications, Soils Report, and from Contractor's own investigation under Article 2.1.

3. Unknown physical conditions at the Site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in Work of the character provided for in the Contract.

b. The District shall investigate the conditions, and if District finds that the conditions do materially so differ, do involve hazardous waste, and cause a decrease or increase in the Contractor's cost of, or the time required for, performance of any part of the Work shall issue a Change Order or Construction Change Document under the procedures described in the Contract.

c. In the event that a dispute arises between the public entity or District and the Contractor whether the conditions materially differ, involve hazardous waste, or cause a decrease or increase in the Contractor's cost of, or time required for,

performance of any part of the Work, the Contractor shall not be excused from any scheduled Completion Date provided for by the Contract, but shall proceed with all Work to be performed under the Contract. The Contractor shall retain any and all rights provided either by Contract or by law which pertain to the resolution of disputes and protests between the contracting parties.

4.6.8 Dispute Concerning Extension of Time.

If Contractor and District cannot agree upon an extension of time, whether compensable or not, then Contractor must have first completed the procedures set forth in Article 8.4. Upon completion of the procedures set forth under Article 8.4, Contractor must then comply with the requirements in this Article including those set forth under Article 4.6.9.

4.6.9 Claims Procedures

Pursuant to the remedies under Public Contract Code section 9201 and Government Code section 930.2, Contractor, through execution of this Agreement, also agrees to comply with the Claims requirements of Article 4.6 to quickly and efficiently resolve disputes. Further, to provide a level of accuracy to the records submitted, the District shall have the right to audit books and records pursuant to Article 13.11 based on the actual costs incurred and to reduce the uncertainty in resolving disputes with limited information.

4.6.9.1 *Procedure Applicable to All Claims*

a. Definition of Claim: A "Claim" is where a Dispute between the parties rises to the level where backup documentation is assembled and provided to the District as a separate demand by the Contractor for (1) time extension, (2) payment of money or damages arising from Work done by or on behalf of the Contractor pursuant to the Contract and payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled to, or (3) and amount the payment of which is disputed by the District. (If the Claim is for damages associated with a DSA Stop Work Order, the Contractor shall not be entitled to a request for Compensation, but shall be entitled to utilize Governmental Delay Float (See Article 8.1.5.1.))

b. Filing Claim Is Not Basis to Discontinue Work: The Contractor shall promptly comply with Work under the Contract or Work requested by the District even though a written Claim has been filed. The Contractor and the District shall make good faith efforts to resolve any and all Claims that may arise during the performance of the Work covered by this Contract.

c. Claim Notification: The Contractor shall within seven (7) calendar days after the written decision of the Architect, or if the time period for Architect's decision has passed under Article 4.6.1, submit a notification, in writing, with the District (and the District's CM) stating clearly the basis for the Claim. If the notification is not submitted within seven (7) days after the written decision of the Architect or the passage of time under Article 4.6.1, the Contractor shall be deemed to have waived all right to assert the Claim, and the Claim shall be denied. Claims submitted after the Retention Payment date shall also be considered null and void by the

District. All Claims shall be reviewed pursuant to Articles 4.6.1 through 4.6.5.

The Formal Notification of Claim must be presented as follows:

(1) The term "Claim" must be at the top of the page in no smaller than 20 point writing.

(2) All documentation submitted pursuant to Article 4.6 to the Architect shall be submitted with the "Claim."

(3) A stack of documents, copy of all Project documents, or the submission of random documents shall not constitute an adequate reference to supporting documentation

(4) Any additional or supporting documentation that Contractor believes is relevant should be submitted at this time.

d. Formal Claim Appeal Submission: If the Contractor does not concur with the District's decision regarding the Claim Notification, the Contractor will issue a formal Claim Appeal within fourteen (14) days of receipt of the District's decision and all detailed information in support of the Claim Appeal within thirty (30) days. All appeals shall be submitted before Retention Payment. If the Claim Appeal is not submitted within fourteen (14) calendar days and detailed information within thirty (30) days, the Contractor shall be deemed to have waived its right to assert the Claim and the Claim shall be denied. Contractor's failure to submit any detailed information which is in the possession of Contractor shall render such information inadmissible by Contractor at trial, arbitration or other legal proceeding.

e. Appeal Claim Format: The Contractor shall provide all written detailed documentation which supports the Claim, including but not limited to: arguments, justifications, cost, estimates, Schedule analysis and detailed documentation. The format of the Claim Appeal shall be as follows:

1. Cover letter.

2. Summary of factual basis of Claim and amount of Claim.

3. Summary of the basis of the Claim, including the specific clause and section under the Contract under which the Claim is made.

4. Documents relating to the Claim, including:

   a. Specifications sections in question.
   b. Relevant portions of the Drawings
   c. Applicable Clarifications (RFI's)
   d. Other relevant information, including responses that were received.
   e. Contractor Analysis of Claim merit.

(a) Contractor's analysis of any Subcontractor vendor Claims that are being passed through.
(b) Any analysis performed by outside consultants
(c) Any legal analysis that Contractor deems relevant

f. Break down of all costs associated with the Claim.

g. For Claims relating to time extensions, an analysis and supporting documentation evidencing any effect upon the critical path in conformance with the requirements of Article 8.4 chronology of events and related correspondence.

h. Applicable Daily Reports and logs.
(a) If the Daily Reports or Logs are not available, lost or destroyed, there shall be a presumption that the lost documentation was unfavorable to the Contractor. See California Civil Jury Instruction 204.

i. For Claims involving overhead, cost escalation, acceleration, disruption or increased costs, a full version of job costs reports organized by category of work or Schedule of Values with budget information tracked against actual costs. Any and all supporting back-up data, including the original bid (and associated original unaltered metadata).
(a) The meta data and bid information shall be provided confidentially and subject to a protective order to prevent dissemination to other contractors or to the public. However, the bid documentation should remain intact and available for review and inspection in case of this type of increased cost Claim.
(b) This data on the bid shall be made available to any District attorneys or experts and shall also be utilized as evidence for any legal proceedings.
(c) If the bid documentation is not available, lost or destroyed, there shall be a presumption that the lost bid documentation was unfavorable to the Contractor. See California Civil Jury Instruction 204.

f. Certification: The Contractor (and Subcontractors, if applicable) shall submit with the Claim a certification under penalty of perjury:

1. That the Contractor has reviewed the Claim and that such Claim is made in good faith;

2. Supporting data are accurate and complete to the best of the Contractor's knowledge and belief;

3. The amount requested accurately reflects the amount of compensation for which the Contractor believes the District is liable.

4. That the Contractor is familiar with Government Code sections 12650 et seq. and Penal Code section 72 and that false claims can lead to substantial fines and/or imprisonment.

g. Signature of Certification: If the Contractor is not an individual, the certification shall be executed by an officer or general partner of the Contractor having overall responsibility for the conduct of the Contractor's affairs.

h. Mandatory Claim Appeal Procedure: The Contractor's Claim Appeal shall be denied if it fails to follow the requirements of this Article.

4.6.9.2 District (through CM or District's Agent or Attorney) May Request Additional Information: Within thirty (30) days of receipt of the Claim Appeal and the information under this Article, the District may request in writing any additional documentation supporting the Claim or documentation relating to defenses to the Claim which the District may assert. If additional documents are required, the time in which the Claim is evaluated may be extended by a reasonable time so the Claim and additional documents may be reviewed. *Claims Procedures in Addition to Government Code Claim.* Nothing in the Claims procedures set forth in this Article 4 of the General Conditions shall act to waive or relieve the Contractor from meeting the requirements set forth in Government Code section 900 et seq.

4.6.9.3 *Binding Arbitration of Individual Claim Issues.* To expedite resolution of Claims pursuant to Public Contract Code section 9201, at the District's sole option, the District may submit individual Claims to Arbitration prior to Retention Payment consistent with the requirements of Article 4.6.6.1.

4.6.9.4 *Resolution of Claims in Court of Competent Jurisdiction.* If Claims are not resolved under the procedure set forth and pursuant to Article 4.6.9, such Claim or controversy shall be submitted to a court in the County of the location of the Project after the Project has been completed, and not before.

4.6.9.5 *Warranties, Guarantees and Obligations.* The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon Contractor by the General Conditions and amendments thereto; and all of the rights and remedies available to District and Architect thereunder, are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by laws or regulations by special warranty or guarantee or by other provisions of the Contract Documents, and the provisions of this Article will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right and remedy to which they apply.

ARTICLE 5
SUBCONTRACTORS

5.1 DEFINITIONS

5.1.1 Subcontractual Relations Bound to Same Contract Terms at General Contractor

By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the same obligations and responsibilities, assumed by Contractor pursuant to the Contract Documents. Each subcontract agreement shall preserve and protect the rights of the District and the Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound. Upon written request of the Subcontractor, the Contractor shall identify to the Subcontractor the terms and conditions of the proposed subcontract agreement, which may be at variance with the Contract Documents. Subcontractors shall similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

5.1.2 Subcontractor Licenses

All Subcontractors shall be properly licensed by the California State Licensing Board.

5.1.3 Substitution of Subcontractor

Substitution of Subcontractors shall be permitted only as authorized under Public Contract Code §§ 4107 et seq. Any substitutions of Subcontractors shall not result in any increase in the Contract Price or result in the granting of any extension of time for the completion of the Project.

5.1.4 Contingent Assignment of Subcontracts and Other Contracts

Each subcontract, purchase order, vendor contract or agreement for any portion of the Work is hereby assigned by the Contractor to the District provided that:

a. Such assignment is effective only after Termination of this Contract with the Contractor by the District as provided under Article 14 and only for those subcontracts and other contracts and agreements that the District accepts by notifying the Subcontractor or Materialman (as may be applicable) in writing; and

b. Such assignment is subject to the prior rights of the Surety(ies) obligated under the Payment Bond and Performance Bond.

c. The Contractor shall include adequate provisions for this contingent assignment of subcontracts and other contracts and agreements in each such document.

ARTICLE 6
CONSTRUCTION BY DISTRICT OR BY SEPARATE CONTRACTORS

6.1 DISTRICT'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

6.1.1 Separate Contracts.

6.1.1.1 District reserves the right to let other contracts in connection with this Work. Contractor shall afford other contractors reasonable opportunity for (1) introduction and storage of their materials; (2) access to the Work; and (3) execution of their work. Contractor shall properly connect and coordinate its work with that of other Contractors.

6.1.1.2 If any part of Contractor's Work depends on proper execution or results of any other contractor, the Contractor shall inspect and within seven (7) days or less, report to Architect, in writing, any defects in such work that render it unsuitable for proper execution of Contractor's Work. Contractor will be held accountable for damages to District for that Work which it failed to inspect or should have inspected. Contractor's failure to inspect and report shall constitute its acceptance of other contractors' Work as fit and proper for reception of its Work, except as to defects which may develop in other contractors' work after execution of Contractor's work.

6.1.1.3 To ensure proper execution of its subsequent Work, Contractor shall measure and inspect Work already in place and shall at once report to the Architect in writing any discrepancy between executed Work as built and the Contract Documents.

6.1.1.4 Contractor shall ascertain to its own satisfaction the scope of the Project and nature of any other contracts that have been or may be awarded by District in prosecution of the Project and the potential impact of such Work on the Baseline Schedule or Schedule updates.

6.1.1.5 Nothing herein contained shall be interpreted as granting to Contractor the exclusive occupancy at the site of Project. Contractor shall not cause any unnecessary hindrance or delay to any other contractor working on the Project Site. If execution of any contract by the District is likely to cause interference with Contractor's performance of this Contract, once Contractor provides District timely written notice and identifies the Schedule Conflict, District shall decide which contractor shall cease work temporarily and which contractor shall continue, or whether Work can be coordinated so that contractors may proceed simultaneously.

6.1.1.6 District shall not be responsible for any damages suffered or extra costs incurred by Contractor resulting directly or indirectly from award or performance or attempted performance of any other contract or contracts at the Project necessary for the performance of the Project (examples include Electrical Utility Contractor, separate offsite contractor, a separate grading contractor, furniture installation etc.)

CONTRACTOR IS AWARE THAT THIS CONTRACT MAY BE SPLIT INTO SEVERAL PHASES BASED ON DOCUMENTATION PROVIDED WITH THIS BID OR DISCUSSED AT THE JOB WALK. CONTRACTOR HAS MADE ALLOWANCE FOR ANY DELAYS OR DAMAGES WHICH MAY ARISE FROM COORDINATION WITH CONTRACTORS REQUIRED FOR OTHER PHASES. IF ANY DELAYS SHOULD ARISE FROM ANOTHER CONTRACTOR WORKING ON A DIFFERENT PHASE, CONTRACTOR'S SOLE REMEDY FOR

DAMAGES, INCLUDING DELAY DAMAGES, SHALL BE AGAINST THE CONTRACTOR WHO CAUSED SUCH DAMAGE AND NOT THE DISTRICT. CONTRACTOR SHALL PROVIDE ACCESS TO OTHER CONTRACTORS FOR OTHER PHASES AS NECESSARY TO PREVENT DELAYS AND DAMAGES TO OTHER CONTRACTORS WORKING ON OTHER PHASES OF CONSTRUCTION.

6.1.2 District's Right to Carry Out the Work

See Article 2.2.

6.1.3 Designation as Contractor

When separate contracts are awarded to contractors on the Project Site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate District/Contractor Agreement.

6.1.4 District Notice to the Contractor of Other Contractors

The Contractor shall have overall responsibility to reasonably coordinate and schedule Contractor's activities with the activities of the District's forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the District in reviewing their construction schedules when:

a. Notice is provided in the Contract Documents of other scope of Work,

b. In the case where there is known Work to be performed by other Contractors

c. For outside contractors hired by utilities

d. Where the Contract Document provides "Work by Others" or "By Others"

e. Where specifically noted during the Pre-Bid Conference

f. Where specifically noted in the Mandatory Job Walk

g. By CO or ICD,

h. With respect to the installation of :
   1. Furniture,
   2. Electronics and networking equipment,
   3. Cabling,
   4. Low voltage,
   5. Off-site work,
   6. Grading (when by a separate contractor),
   7. Environmental remediation when excluded by the Contract Documents (i.e. asbestos, lead or other hazardous waste removal)
   8. Deep cleaning crews,
   9. Commissioning and testing,
   10. Keying and re-keying,

11. Programming

6.1.4.2 Exception where no Coordination is Required on the Part of the Contractor for Turn Key Operations. If the Contractor has specifically outlined a "Turn Key" or "Complete Delivery" of a final completed operational school in writing as part of the Baseline Schedule..

6.1.4.3 The Contractor shall make any revisions to the Baseline Schedule (or Schedule Update) and Contract Sum deemed necessary after a joint review and mutual agreement. The Baseline Schedule (or Schedule Update) shall then constitute the Schedules to be used by the Contractor, separate contractors, and the District until subsequently revised. Additionally, Contractor shall coordinate with Architect, District, and Inspector to ensure timely and proper progress of Work.

6.2 CONSTRUCTIVE OWNERSHIP OF PROJECT SITE AND MATERIAL

Upon commencement of Work, the Contractor becomes the constructive owner of the entire site, improvements, material and equipment on Project site. Contractor must ensure proper safety and storage of all materials and assumes responsibility as if Contractor was the owner of the Project site. All risk of loss or damage shall be borne by Contractor during the Work until the date of Completion. As constructive owner of the Project site, Contractor must carry adequate insurance in case of calamity and is not entitled to rely on the insurance requirements as set forth in this Agreement as being adequate coverage in case of calamity.

6.3 DISTRICT'S RIGHT TO CLEAN UP

If a dispute arises among the Contractor, separate contractors, and the District as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish as described in Article 3.12, the District may clean up and allocate the cost among those it deems responsible.

ARTICLE 7
CHANGES IN THE WORK

7.1 CHANGES

7.1.1 No Changes Without Authorization

There shall be no change whatsoever in the Drawings, Specifications, or in the Work without an executed Change Order, Change Order Request, Immediate Change Directive, or order by the Architect for a minor change in the Work as herein provided. District shall not be liable for the cost of any extra work or any substitutions, changes, additions, omissions, or deviations from the Drawings and Specifications unless the District's Governing Board or designated representative with delegated authority (subject to Board ratification) has authorized the same and the cost thereof approved in writing by Change Order or executed Construction Change Document. No extension of time for performance of the Work shall be allowed hereunder unless claim for such extension is made at the time changes in the Work are ordered, and such time duly adjusted in writing in the Change Order. The provisions of the Contract Documents shall apply to all such changes, additions, and omissions with the same effect as if originally embodied in the Drawings and Specifications. Notwithstanding anything to the contrary in this Article 7, all Change Orders shall be prepared and issued by the Architect and shall become effective when executed by the District's Governing Board, the Architect, and the Contractor.

Should any Change Order result in an increase in the Contract Price, the cost of such Change Order shall be agreed to, in writing, in advance by Contractor and District and be subject to the monetary limitations set forth in Public Contract Code section 20118.4 (Please check with the District since there are different interpretations of the limitations of Public Contract Code section 20118.4 depending on the County the Project is located). In the event that Contractor proceeds with any change in Work without first notifying District and obtaining the Architect's and District's consent to a Change Order, Contractor waives any Claim of additional compensation for such additional work and Contractor takes the risk that a Notice of Non-Compliance may issue, a critical path Project delay may occur, and the Contractor will also be responsible for the cost of preparation and DSA CCD review fees for a corrective DSA approved Construction Change Document.

CONTRACTOR UNDERSTANDS, ACKNOWLEDGES, AND AGREES THAT THE REASON FOR THIS NOTICE REQUIREMENT IS SO THAT DISTRICT MAY HAVE AN OPPORTUNITY TO ANALYZE THE WORK AND DECIDE WHETHER THE DISTRICT SHALL PROCEED WITH THE CHANGE ORDER OR ALTER THE PROJECT SO THAT SUCH CHANGE IN WORK BECOMES UNNECESSARY AND TO AVOID THE POSSIBLE DELAYS ASSOCIATED WITH THE ISSUANCE OF A NOTICE OF NON-COMPLIANCE.

7.1.2 Notices of Non-Compliance

Contractor deviation or changes from approved Plans and Specifications may result in the issuance of a Notice of Non-Compliance (See DSA Form 154). Contractor is specifically notified that deviations from the Plans and Specifications, whether major or minor, may result in the requirement to obtain a DSA Construction Change Document to correct the Notice of Non-Compliance. (See Article 7.3.1 for Definition of CCD). In some cases, the lack of a DSA approved CCD AND verification from the Inspector that a Notice of Non-Compliance has been corrected may result in a critical path delay to the next stage of Work on the Project. Specifically, a deviation from approved Plans and Specifications may prevent approval of the category of Work listed in the DSA 152 Project Inspection Card. Any delays that are caused

by the Contractor's deviation from approved Plans and Specifications shall be the Contractor's responsibility.

7.1.3 Architect Authority

The Architect will have authority to order minor changes in the Work that do not involve DSA Approval not involving any adjustment in the Contract Sum, or an extension of the Contract Time.

7.2 CHANGE ORDERS ("CO")

A CO is a written instrument prepared by the Architect and signed by the District (as authorized by the District's Governing Board), the Contractor, and the Architect stating their agreement upon all of the following:

a. A description of a change in the Work;

b. The amount of the adjustment in the Contract Sum, if any; and

c. The extent of the adjustment in the Contract Time, if any.

A CO may be comprised of ICD's, Response to RFP's and COR's

7.3 CONSTRUCTION CHANGE DOCUMENT (CCD Category A, and CCD Category B) and IMMEDIATE CHANGE DIRECTIVE (ICD)

7.3.1 Definitions

7.3.1.1 *Construction Change Document (CCD)*. A Construction Change Document is a DSA term that is utilized to address changes to the DSA approved Plans and Specifications. There are two types of Construction Change Documents. (1) DSA approved CCD Category A (DSA Form 140) for Work affecting structural, access compliance or fire/ life safety of the Project which will require a DSA approval; and, (2) CCD Category B (DSA Form 141) for work NOT affecting structural safety, access compliance or fire/ life safety that will not require a DSA approval (except to confirm that no approval is required);

7.3.1.2 *Immediate Change Directive (ICD)*. An Immediate Change Directive is a written order to the Contractor prepared by the Architect and signed by the District (and CM if there is a CM on the Project) and the Architect, directing a change in the Work and stating a proposed basis for adjustment, if any, in the Contract Sum or Contract Time, or both. The District may by ICD, without invalidating the Contract, direct immediate changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions within. If applicable, the Contract Sum and Contract Time will be adjusted accordingly.

In the case of an Immediate Change Directive being issued, Contractor must commence Work immediately or delays from failure to perform the ICD shall be the responsibility of Contractor and the failure to move forward with Work immediately shall also be grounds for Termination under Article 14.

An ICD does not automatically trigger an Article 7.6 Dispute or Claim. Contractor must timely follow the procedures outlined at Article 7.6 and 4.6 where applicable.

Refer to Division 1 and Supplementary General Conditions for a copy of the proposed Immediate Change Directive form.

7.3.2 Use to Direct Change

An ICD shall be used to move work forward immediately and to avoid delay. In some cases, an ICD shall be issued in the absence of agreement on the terms of a CO, COR, or RFP. A copy of an ICD form is provided in the Supplementary General Conditions and Division 1. The anticipated not to exceed price for the Work will be inserted into the ICD. In the case of an ICD issued to correct Contractor Deficiencies or to correct a Contractor caused Notice of Non-Compliance, the ICD may be issued with $0 and no additional time. Contract may prepare a COR associated with the ICD pursuant to Article 7. However, Contractor shall proceed with all Work required under an Approved ICD immediately upon issuance. Failure to proceed with the Work under an ICD shall be grounds for Termination for Cause under Article 14 or take over the Work under Article 2.2.

If adequate time exists, an ICD may be subject of an RFP for pricing and determination if any time that may be required. However, if an RFP is not completed, Contractor shall immediately commence Work when an ICD is issued. If the RFP is incomplete, it may still be completed to be submitted for pricing purposes as long as the RFP is submitted within the timeline provided by the RFP, or within 10 days following issuance of the ICD.

7.3.3 ICD Issued Over a Notice of Non-Compliance or to Cover Work Subject to a DSA 152 Sign Off

In some cases, an ICD shall be for the purpose of proceeding with Work to keep the Project on Schedule and as an acknowledgement by the District that Contractor is proceeding with Work contrary to a Notice of Non-Compliance, prior to issuance of a DSA approved CCD Category A, or to direct the covering of Work which has not yet received a DSA 152 Inspection Approval to move forward.

7.3.3.1 *Contractor Compliance with all Aspects of an IC*D. Contractor is to undertake the ICD and comply with all aspects of the Work outlined in the ICD. Inspector is to inspect the Work pursuant to the ICD. Failure to follow the ICD may result in deduction of the ICD Work under Article 2.2 or Termination of the Contractor pursuant to Article 14.

7.3.3.2 *Exception in the Case of DSA Issued Stop Work Order*. Contractor must proceed with an ICD even if a CCD has not been approved by DSA except in the case of a DSA issued Stop Work Order. If a DSA Stop Work Order is issued, Contractor must stop work and wait further direction from the District.

7.3.3.3 *ICD Due to Contractor Deficiency or Contractor Caused Notice of Non-Compliance*. If an ICD is issued to correct a Contractor Deficiency or a Contractor caused notice of Non-Compliance, Contractor specifically acknowledges responsibility for all consequential damages associated with the Contractor Deficiency or Contractor caused Notice of Non-Compliance and all consequential damages and costs incurred to correct the deficiency under Article 4.5

7.4 REQUEST FOR INFORMATION ("RFI")

7.4.1 Definition

A RFI is a written request prepared by the Contractor requesting the Architect to provide additional information necessary to clarify or amplify an item which the Contractor believes is not clearly

shown or called for in the Drawings or Specifications, or to address problems which have arisen under field conditions.

7.4.1.1 A RFI shall not be used as a vehicle to generate time extensions.

7.4.1.2 Resubmission of the same or similar RFI is not acceptable. RFI's that are similar should be addressed in Project meetings where the requestor (Contractor, Subcontractor or vendor) is able to address the particular issue with the Architect or Engineer and a resolution addressed in the minutes.

7.4.1.3 A RFI response applicable to a specific area cannot be extended to other situations unless specifically addressed in writing within the RFI or in a separate RFI.

7.4.1.4 RFI's should provide a proposed solution and should adequately describe the problem that has arisen.

7.4.2 Scope

The RFI shall reference all the applicable Contract Documents including Specification section, detail, page numbers, Drawing numbers, and sheet numbers, etc. The Contractor shall make suggestions and interpretations of the issue raised by the RFI. An RFI cannot modify the Contract Cost, Contract Time, or the Contract Documents.

7.4.3 Response Time

The Architect must respond to a RFI within a reasonable time after receiving such request. If the Architect's response results in a change in the Work, then such change shall be effected by a written CO, COR RFP or ICD, if appropriate. If the Architect cannot respond to the RFI within a reasonable time, the Architect shall notify the Contractor, with a copy to the Inspector and the District, of the amount of time that will be required to respond.

7.4.4 Costs Incurred

The Contractor shall be responsible for any costs incurred for professional services as more fully set forth in Article 4.5, which shall be subject to a Deductive Change Order, if an RFI requests an interpretation or decision of a matter where the information sought is equally available to the party making such request. District, at its sole discretion, shall issue a Deductive Change Order to Contractor for all such professional services arising from this Article.

7.5 REQUEST FOR PROPOSAL ("RFP")

7.5.1 Definition

A RFP is a written request prepared by the Architect (and/or CM) requesting the Contractor to submit to the District and the Architect an estimate of the effect of a proposed change on the Contract Price and (if applicable) the Contract Time. If Architect issues a Bulletin, the Changed items in the Bulletin shall be addressed as an RFP and all responses shall be prepared to a Bulletin as addressed in this Article 7.5. A form RFP is included in the Division 1 documents.

7.5.2 Scope

A RFP shall contain adequate information, including any necessary Drawings and Specifications, to enable Contractor to provide the cost breakdowns required by Article 7.7. The Contractor shall not be entitled to any Additional Compensation for preparing a response to an RFP, whether ultimately accepted or not.

7.5.3 Response Time

Contractor shall respond to an RFP within ten (10) days or the time period otherwise set forth in the RFP.

7.6 CHANGE ORDER REQUEST ("COR")

7.6.1 Definition

A COR is a written request prepared by the Contractor supported by backup documentation requesting that the District and the Architect issue a CO based upon a proposed change, cost, time, or cost and time that may be incurred on the Project or arising from an RFP, ICD, or CCD.

7.6.2 Changes in Price

A COR shall include breakdowns per Article 7.7 to validate any change in Contract Price due to proposed change or Claim.

7.6.3 Changes in Time

A COR shall also include any additional time required to complete the Project only if the delay is a critical path delay. Any additional time requested shall not be the number of days to make the proposed change, but must be based upon the impact to the Project Schedule as defined in Article 8. A schedule fragnet showing the time delay must be submitted with the COR. Any changes in time will be granted only if there is an impact to the critical path. If Contractor fails to request a time extension in a COR, then the Contractor is thereafter precluded from requesting or claiming a delay.

7.7 COST OF CHANGE ORDERS

7.7.1 Scope

Within ten (10) days after a request is made for a change that impacts the Contract Sum as defined in Article 9.1, the critical path, or the Contract Time as defined in Article 8.1.1, the Contractor shall provide the District and the Architect, with a written estimate of the effect of the proposed CO upon the Contract Sum and the actual cost of construction, which shall include a complete itemized cost breakdown of all labor and material showing actual quantities, hours, unit prices, and wage rates required for the change, and the effect upon the Contract Time of such CO. Changes may be made by District by an appropriate written CO, or, at the District's option, such changes shall be implemented immediately upon the Contractor's receipt of an appropriate written Construction Change Document.

District may, as provided by law and without affecting the validity of this Agreement, order changes, modification, deletions and extra work by issuance of written CO or CCD from time to time during the progress of the Project, Contract Sum being adjusted accordingly. All such Work shall be executed under conditions of the original Agreement except that any extension of time caused thereby shall be adjusted at time of ordering such change. District has discretion to order changes on a "time and material"

basis with adjustments to time made after Contractor has justified through documentation the impact on the critical path of the Project.

7.7.1.1 *Time and Material Charges.* If the District orders Work on a "time and material" basis, timesheets shall be signed daily by the Inspector or District Representative at or near the time the Work is actually undertaken and shall show the hours worked, and the Work actually completed. No time sheets shall be signed the next day. A copy shall be provided to the Person signing the document at the time the document is signed, but not before 10 am the following day.

7.7.2 Determination of Cost

The amount of the increase or decrease in the Contract Price from a CO or COR, if any, shall be determined in one or more of the following ways as applicable to a specific situation:

a. Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation. If an agreement cannot be reached within fifteen (15) days after submission and negotiation of Contractor's proposal, Contractor may submit pursuant to Article 7.7.3. Submission of sums which have no basis in fact are at the sole risk of Contractor and may be a violation of the False Claims Act set forth under Government Code section 12650 et seq.);

1. If the District objects to 7.7.2(a) as a method for submission due to inaccuracies in the submitted amount, overstatement of manpower or time required to perform the CO, or unreliability of the data provided, the District may either have the Architect or a professional estimator determine the cost for the CO, and the applicable time extension, or the Contractor shall utilize Article 7.7.2(d) or 7.7.3.

2. Once the District provides a written objection to use of Article 7.7.2(a) due to unreliability of the estimated price, the Contractor shall no longer utilize mutual acceptance of a lump sum as a method for submission of CO's and shall provide a breakdown of estimated or actual costs pursuant to Article 7.7.2(d) or 7.7.3.

b. By unit prices contained in Contractor's original bid and incorporated in the Project documents or fixed by subsequent agreement between District and Contractor;

c. Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee. However, in the case of disagreement, Contractor must utilize the procedure under Article 7.7.3; or

d. By cost of material and labor and percentage of overhead and profit. If the value is determined by this method the following requirements shall apply:

1. *Basis for Establishing Costs*

(1) Labor will be the actual cost for wages prevailing locally for each craft or type of workers at the time the extra Work is done, plus employer payments of payroll taxes and workers compensation insurance (exclude insurance costs as part of the overhead and

profit mark-up), health and welfare, pension, vacation, apprenticeship funds, and other direct costs resulting from Federal, State, or local laws, as well as assessments or benefits required by lawful collective bargaining agreements. In no case shall the total labor costs exceed the applicable prevailing wage rate for that particular classification. The use of a labor classification which would increase the extra Work cost will not be permitted unless the Contractor establishes the necessity for such additional costs. Labor costs for equipment operators and helpers shall be reported only when such costs are not included in the invoice for equipment rental.

(2) Materials shall be at invoice or lowest current price at which such materials are locally available and delivered to the Site in the quantities involved, plus sales tax, freight, and delivery. The District reserves the right to approve materials and sources of supply or to supply materials to the Contractor if necessary for the progress of the Work. No markup shall be applied to any material provided by the District.

(3) Tool and Equipment Rental. No payment will be made for the use of tools which have a replacement value of $250 or less.

Regardless of ownership, the rates to be used in determining equipment rental costs shall not exceed listed rates prevailing locally at equipment rental agencies or distributors at the time the Work is performed. Rates applied shall be appropriate based on actual equipment need and usage. Monthly, weekly or other extended use rates that results in the lowest cost shall be applied if equipment is used on site for extended periods.

The rental rates paid shall include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, and all incidentals.

Necessary loading and transportation costs for equipment used on the extra Work shall be included. If equipment is used intermittently and, when not in use, could be returned to its rental source at less expense to the District than holding it at the Work Site, it shall be returned unless the Contractor elects to keep it at the Work Site at no expense to the District.

All equipment shall be acceptable to the Inspector, in good working condition, and suitable for the purpose for which it is to be used. Manufacturer's ratings and modifications shall be used to classify equipment, and equipment shall be powered by a unit of at least the minimum rating recommended by the manufacturer.

If tool and equipment charges are part of a Dispute, Claim, or Appeal, the District reserves the right to utilize actual costs for tools and equipment or a depreciation rate for equipment based on audit finding

under Article 13.11 and deduct any rental charges that exceed actual or depreciated costs.

e. Other Items. The District may authorize other items which may be required on the extra work. Such items include labor, services, material, and equipment which are different in their nature from those required by the Work, and which are of a type not ordinarily available from the Contractor or any of the Subcontractors. Invoices covering all such items in detail shall be submitted with the request for payment.

f. Invoices. Vendors' invoices for material, equipment rental, and other expenditures shall be submitted with the COR. If the request for payment is not substantiated by invoices or other documentation, the District may establish the cost of the item involved at the lowest price which was current at the time of the Daily Report.

g. Overhead. Overhead, including direct and indirect costs, shall be submitted with the COR and include: field overhead, home office overhead, off-site supervision, CO preparation/negotiation/research, time delays, Project interference and disruption, additional guaranty and warranty durations, on-site supervision, additional temporary protection, additional temporary utilities, additional material handling costs, liability and property damage insurance, and additional safety equipment costs.

7.7.3 Format for COR or CO's

The following format shall be used as applicable by the District and the Contractor to communicate proposed additions to the Contract. All costs submitted shall be actual costs and labor shall be unburdened labor. Refer to Division 1 for a copy of the Construction Change Order form.

		EXTRA	CREDIT
(a)	Material (attach itemized quantity and unit cost plus sales tax)		
(b)	Labor (attach itemized hours and rates)		
(c)	Equipment (attach invoices)		
(d)	Subtotal		

		EXTRA	CREDIT
(e)	Social Security, and Unemployment Taxes, not to exceed as follows: FICA @ **6.2%**- with a wage ceiling of $84,900; Medicare @ **1.45%**- no wage ceiling; FUTA @ **.8%**- with a wage ceiling of $7,000; ETT and SUI @ **2.3%**- with a wage ceiling of $7,000; Workers' Compensation @ **5.94%**; **Total not-to-exceed is 16.69%.** (*Note: Modifications to these percentages will be evaluated and possibly modified only on a case-by-case basis and only after proper proof of alternate percentages are documented and approved in advance. In addition, as wage ceilings are met, those corresponding percentages must drop from the "burden" calculations).*		
(f)	Subtotal		
(g)	Total Overhead and Profit (inclusive of Liability and Property Damage Insurance): Not to exceed ten percent (10%) of Item (f).		
(h)	Subtotal		
(i)	Bond not to exceed one percent (1%) of Item (f)		
(k)	TOTAL		
(l)	Time		

The undersigned Contractor approves the foregoing Change Order or Immediate Change Directive as to the changes, if any, and the Contract price specified for each item and as to the extension of time allowed, if any, for completion of the entire Work on account of said Change Order or Immediate Change Directive, and agrees to furnish all labor, materials and service and perform all Work necessary to complete any additional Work specified therein, for the consideration stated herein. It is understood that said Change Order or Immediate Change Directive shall be effective when approved by the Governing Board of the District.

It is expressly understood that the value of such extra Work or changes, as determined by any of the aforementioned methods, expressly includes any and all of the Contractor's costs and expenses, both direct and indirect, resulting from additional time required on the Project or resulting from delay to the Project. Any costs, expenses, damages or time extensions not included are deemed waived.

The Contractor expressly acknowledges and agrees that any change in the Work performed shall not be deemed to constitute a delay or other basis for claiming additional compensation based on theories including, but not limited to, acceleration, suspension or disruption to the Project.

7.7.3.1 *Adjustment for Time and Compensable Delay*. A CO shall also include any additional time required to complete the Project. Any additional time requested shall not be the number of days to make the proposed change, but must be based upon the impact to the Project Schedule as defined in Article 8 of the General Contract. A schedule fragnet showing the time delay must be submitted with the CO. Any changes in time will be granted only if there is an impact to the critical path. If Contractor fails to request a time extension in a CO, then the Contractor is thereafter precluded from requesting or claiming a delay.

7.7.4 Deductive Change Orders

All Deductive Change Order(s) must be prepared utilizing the form under Article 7.7.3 (a) – (d) only, setting forth the actual costs incurred. Except in the case of an Article 2.2 or 9.6 Deductive Change Order where no mark-up shall be allowed, Contractor will be allowed a maximum of 5% total profit and overhead.

For unilateral Deductive Change Orders, or where credits are due from Contractor for Allowances, Deductive Items, Inspection, Damage, DSA CCD review costs, Architect or Inspector costs for after hours or corrective services, Work removed from the Agreement under Article 2.2 or Article 9.6, there shall be no mark-up.

District may, any time after a Deductive Change Order is presented to Contractor by District for items under Article 2.2 or Article 9.6 of if there is disagreement as to the Deductive Change Order, issue a unilateral Deductive Change Order on the Project and deduct the Deductive Change Order from a Progress Payment, Final Payment, or Retention.

7.7.5 Discounts, Rebates, and Refunds

For purposes of determining the cost, if any, of any change, addition, or omission to the Work hereunder, all trade discounts, rebates, refunds, and all returns from the sale of surplus materials and equipment shall accrue and be credited to the Contractor, and the Contractor shall make provisions so that such discounts, rebates, refunds, and returns may be secured, and the amount thereof shall be allowed as a reduction of the Contractor's cost in determining the actual cost of construction for purposes of any change, addition, or omissions in the Work as provided herein. All CO's are subject to Audit under Article 13.11 for discounts, rebates and refunds.

7.7.6 Accounting Records

With respect to portions of the Work performed by CO's and CCD's on a time-and-materials, unit-cost, or similar basis, the Contractor shall keep and maintain cost-accounting records in a format consistent with accepted accounting standards and satisfactory to the District, which shall be available to the District on the same terms as any other books and records the Contractor is required to maintain under the Contract Documents.

Any time and material charges shall require Inspector's signature on time and material cards showing the hours worked and the Work actually completed. See Article 7.7.1.1.

7.7.7 Notice Required

If the Contractor desires to initiate a Dispute for an increase in the Contract Price, or any extension in the Contract Time for completion, Contractor shall notify the applicable party responsible for addressing the Dispute or Claim pursuant to Article 4.6. No Claim or Dispute shall be considered unless made in accordance with this subparagraph. Contractor shall proceed to execute the Work even though the adjustment may not have been agreed upon. Any change in the Contract Price or extension of the Contract Time resulting from such Claim shall be authorized by a CO.

7.7.8 Applicability to Subcontractors

Any requirements under this Article 7 shall be equally applicable to CO's, COR's or ICD's issued to Subcontractors by the Contractor to the same extent required by the Contractor.

7.7.9 Alteration to Change Order Language

Contractor shall not alter or reserve time in COR's, CO's or ICD's. Contractor shall execute finalized CO's and proceed under Article 7.7.7 and Article 4.6 with proper notice. If Contractor intends to reserve time without an approved CPM schedule prepared pursuant to Article 8 or without submitting a fragnet showing delay to critical path, then Contractor may be prosecuted pursuant to the False Claim Act.

ARTICLE 8
TIME AND SCHEDULE

8.1 DEFINITIONS

8.1.1 Contract Time

Contractor shall perform and reach Substantial Completion (See Article 1.1.46) within the time specified in the Agreement Form. Moreover, Contractor shall perform its Work in strict accordance with the Project Milestones in the Contract Documents and shall proceed on a properly developed and approved Baseline Schedule, which represents the Contractor's view of the practical way in which the Work will be accomplished. Note that Contract Time includes and incorporates all Float and other Baseline inclusions as noted in Article 8.3.2.1 and as otherwise specifically noted in Article 8.

8.1.2 Notice to Proceed

District may give a Notice to Proceed within ninety (90) days of the award of the bid by District. Once Contractor has received the notice to proceed, Contractor shall complete the Work in the period of time referenced in the Contract Documents.

In the event that District desires to postpone the giving of the Notice to Proceed beyond this three-month period, it is expressly understood that with reasonable notice to the Contractor, the giving of the date to proceed may be postponed by District. It is further expressly understood by Contractor, that Contractor shall not be entitled to any claim of additional compensation as a result of the postponement of the giving of the notice to proceed

If the Contractor believes that a postponement will cause a hardship to Contractor, Contractor may terminate the Contract with written notice to District within 10 days after receipt by Contractor of District's notice of postponement. It is further understood by Contractor that in the event that Contractor terminates the Contract as a result of postponement by the District, the District shall only be obligated to pay Contractor for the Work that Contractor had performed at the time of notification of postponement and the grounds for notification and hardship shall be subject to Audit pursuant to Article 13.11. Should Contractor terminate the Contract as a result of a notice of postponement, District may award the Contract to the next lowest responsible bidder.

8.1.3 Computation of Time

The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

8.1.4 Float

Float is time the total number of days an activity may be extended or delayed without delaying the Completion Date shown in the schedule. Float will fall into three categories: (1) Rain Days; (2) Governmental Delays; and, (3) Project Float. Project Float and Rain Days are owned by the Project and may be utilized as necessary for critical path delays once the days become available for consumption (i.e. the Rain Day arrives and is not utilized since rain did not occur or Work was performed on the interior of a building). However, Governmental Delay float shall not be utilized for purposes other than to address critical path delays that arise due to approvals, Inspector approvals or verifications on governmental forms.

8.1.4.1 *Governmental Delay Float*. It is anticipated that there will be governmental generated delays. Specific to DSA approvals, it is anticipated that no less than twenty-five (25) days per calendar year shall be set aside as Governmental Float to be utilized on critical path delays. A pro-rated number of days shall be calculated based on length of Contract Time. (For example, a two (2) year Contract Time shall require fifty (50) days of Governmental Float. If the Contract Time is 182 days, then the Contract Time shall require twelve and one half (12.5) days of Governmental Float) This Governmental Delay float must be incorporated into the schedule and should be incorporated in each critical activity as Contractor deems fit. Specifically, major categories of Work under the DSA 152 (Project Inspection Card) should be allocated Governmental Delay Float at the Contractor's discretion. Governmental Delay Float on the Project may exceed 25 days per one (1) year period, but Contractor is required to include not be less than 25 days of Governmental Delay Float during each one (1) year period.

Contractor's failure to establish a protocol for requesting inspections is not grounds to utilize Governmental Delay Float. As noted in Article 3.1.4, 48 hours advance notice of commencing Work on a new area is required after submitting form DSA 156 and under PR 13-01 Special Inspection reports are not required to be posted until at least 14 days after the Work was inspected. Failure to plan, and pay (if applicable) for quicker delivery of Special Inspections is not Governmental Delay Float under Article 8.1.4.1. If Governmental Delay Float is not utilized, this float is carried through to other DSA 152 categories of inspection and consumed over the course of the Project

Governmental Delay Float may be utilized for a DSA Stop Work Order regardless of fault as defined under Education Code section 17307.5(b).

8.1.4.2 *Inclement Weather (Rain Days)*. The Contractor will only be allowed a time extension for unusually severe weather if it results in precipitation or other conditions which in the amount, frequency, or duration is in excess of the norm at the location and time of year in question as established by NOAA weather data. No less than 22 calendar days for each calendar year for Southern California will be allotted for in the Contractor's schedule for each winter weather period or carried at the end of the schedule as Rain Float. Float for weather days in other geographical regions shall be adjusted based on NOAA weather data for the geographical location. Contractor has anticipated all the days it takes to dry out and re-prepare areas that may be affected by weather delays which extend beyond the actual weather days. The weather days shall be shown on the schedule and if not used will become float for the Project's use. The Contractor will not be allowed a day-for-day weather delay for periods noted as float in the Schedule. The Contractor is expected to work seven (7) days per week (if necessary, irrespective of inclement weather), to maintain access, and to protect the Work under construction from the effects of inclement weather. Additional days beyond the NOAA shall be considered under the same criteria that weather days are granted below.

A Rain Day shall be granted by Architect or CM if the weather prevents the Contractor from beginning Work at the usual daily starting time, or prevents the Contractor from proceeding with seventy-five (75%) of the normal labor and equipment force towards completion of the day's current controlling item on the accepted schedule for a period of at least five hours, and the crew is dismissed as a result thereof, the Architect will designate such time as unavoidable delay and grant one (1) critical path activity calendar-day extension if there is no available float for the calendar year.

8.1.4.3 *Project Float*. The Contractor may determine some activities require a lesser duration than allocated and may set aside float in the Project Schedule. There shall be no early completion. Instead, to the extent float is either addressed at the end of the Project or throughout each category of critical path work, Project float may be used as necessary during the course of the Project and allocated on a first, come first serve basis. However, the use of float does not extend to Governmental Delay Float, which shall only be used for Governmental Delays.

8.2 HOURS OF WORK

8.2.1 Sufficient Forces

Contractors and Subcontractors shall continuously furnish sufficient forces to ensure the prosecution of the Work in accordance with the Construction Schedule.

8.2.2 Performance During Working Hours

Work shall be performed during regular working hours as permitted by the appropriate governmental agency except that in the event of an emergency, or when required to complete the Work in accordance with job progress, Work may be performed outside of regular working hours with the advance written consent of the District and approval of any required governmental agencies.

8.2.3 Costs for After Hours Inspections

If the Work done after hours is required by the Contract Documents, a Recovery Schedule, or as a result of the Contractor's failure to plan, and inspection must be conducted outside the Inspector's regular working hours, the costs of any after hour inspections, shall be borne by the Contractor.

If the District allows the Contractor to do Work outside regular working hours for the Contractor's convenience, the costs of any inspections required outside regular working hours shall be invoiced to the Contractor by the District and a Deductive Change Order shall be issued from the next Progress Payment.

If the Contractor elects to perform Work outside the Inspector's regular working hours, costs of any inspections required outside regular working hours shall be invoiced to the Contractor by the District and a Deductive Change Order from the next Progress Payment as a Deductive Change Order.

8.3 PROGRESS AND COMPLETION

8.3.1 Time of the Essence

Time limits stated in the Contract Documents are of the essence to the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

8.3.2 Baseline Schedule Requirements

8.3.2.1 *Timing*: Within ten (10) calendar days after Notice to Proceed, Contractor shall submit a practical schedule showing the order in which the Contractor proposes to perform the Work, and the dates on which the Contractor contemplates starting and completing the salient categories of the Work. This first schedule which outlines the Contractor's view of the practical way in which the Work will be accomplished is the Baseline Schedule. If the Contractor Fails to submit the Baseline Schedule within the ten (10) days noted, then District may withhold processing and approval of progress payments pursuant to Article 9.4 and 9.6.

8.3.2.2 *District Review and Approval:* District, Architect and CM will review both a paper and electronic copy of Baseline Schedule and may provide comments as noted in this Article and either approve or disapprove the Baseline Schedule. All Schedules shall be prepared using an electronic scheduling program acceptable to District. All Schedules shall be delivered in an electronic format usable

by the District. All logic ties and electronic information shall be included in the electronic copy of the Baseline Schedule that is delivered to the District.

8.3.2.3 *Schedule Must Be Within the Given Contract Time.* The Baseline Schedule shall not exceed time limits set forth in the Contract Documents and shall comply with all of the scheduling requirements as set forth in the Specifications and Contract Documents.

8.3.2.4 *Submittals Must Be Incorporated (See Articles 3.7 and 3.9)*: Contractor shall include Submittals as line items in the Baseline Schedule as required under Article 3.7.2 and 3.9.6. Submittals shall not delay the Work, Milestones, or the Completion Date. Failure to include Submittals in the Baseline Schedule shall be deemed a material breach by the Contractor.

8.3.2.5 *Float Must Be Incorporated*. The Baseline Schedule must indicate the beginning and completion of all phases of construction and shall use the "critical path method" (commonly called CPM) for the value reporting, planning and scheduling, of all Work required under the Contract Documents. The Baseline Schedule must incorporate all Milestones in the Project and apply Governmental Float at each Milestone in the Contractor's discretion. The Baseline Schedule shall incorporate any Schedule provided by the District as part of the bid and shall note durations that will not be adequate or should be shortened based on Contractor's review. These changes shall be identified and incorporated into Contractor's Baseline Schedule as long as requested changes are made within 10 days after the District chooses to move forward with the Project. Scheduling is necessary for the District's adequate monitoring of the progress of the Work and shall be prepared in accordance with the time frame described in this Article 8. The Architect may disapprove of any Schedule or require modification to it if, in the opinion of the Architect or District, adherence to the any Schedule prepared by the Contractor will not cause the Work to be completed in accordance with the Agreement.

8.3.2.6 *No Early Completion.* Contractor shall not submit any Schedule showing early completion without indicating float time through the date set for Project completion by District. Contractor's Baseline Schedule shall account for all days past early completion as float which belongs to the Project. Usage of float shall not entitle Contractor to any delay Claim or damages due to delay.

8.3.2.7 *Use of Schedule Provided in Bid Documents.* In some cases, the bid will include a preliminary schedule indicating Milestones and construction sequences for the Project along with general timing for the Project. The preliminary schedule is not intended to serve as the Baseline Schedule utilized for construction. It is up to the Contractor to study and develop a Baseline Schedule to address the actual durations and sequences of Work that is anticipated while maintaining the Milestones provided by the District. Contract shall obtain information from Contractor's Subcontractors and vendors on the planning, progress, delivery of equipment, coordination, and timing of availability of Subcontractors so a practical plan of Work is fully developed and represented in the Baseline Schedule.

8.3.2.8 *Incorrect Logic, Durations, Sequences, or Critical Path.* The District may reject or indicate durations, sequences, critical path or logic are not acceptable and request changes. The electronic copy of the Baseline Schedule shall have adequate information so logic ties, duration, sequences and critical path may be reviewed electronically. Contractor is to diligently rebuild and resubmit the Baseline Schedule to represent the Contractor's plan to complete the Work and maintain Milestones at the next progress meeting, or before the next progress meeting. If Contractor is not able to build a Baseline Schedule that is acceptable to the District or Architect, the District reserves the right to utilize the unapproved originally submitted Baseline Schedule (See Article 8.3.2.12) and the comments submitted to hold Contractor accountable for timely delivery of Work and maintenance of Milestones. Furthermore, Contractor's representations in the Baseline Schedule, if unacceptable, may also be used as a basis for termination of the Contract under Article 14 if Contractor fails to adequately maintain the Schedule and

falls significantly behind without undertaking the efforts to either submit and follow a Recovery Schedule or fail to submit a Recovery Schedule and make no effort toward recovery on the Project.

8.3.2.9 *Contractor Responsibility Even if Schedule Issues Are Not Discovered.* Failure on the Part of the District to discover errors or omissions in any Schedules submitted shall not be construed to be an approval of the error or omission and any flawed Schedule is not grounds for a time extension.

8.3.2.9.1 Inclusions in Baseline Schedule. In addition to scheduling requirements set forth at Article 8.3.2, Contractor is specifically directed to include (broken out separately) in Contractor's Baseline Schedule and all Schedule updates, the following items required pursuant to these General Conditions, including but not limited to:

1. Rain Day Float (excluding inclement weather) as required under Article 8.1.4.2. For example, if the NOAA provides 22 days of Rain Days, all 22 days must be incorporated and noted in the Baseline Schedule. Further, any days required to clean-up or dry out shall be included for operations that are likely to require a clean-up or dry out period. Days that are not utilized shall be considered float owned by the Project.

2. Governmental Delay Float under Article 8.1.4.1. This Governmental Delay Float shall only be utilized for Governmental Delays and shall not be considered available float owned by the Project. This float shall only be distributed to the Project upon the completion of the Project and shall be used to offset Liquidated Damages and shall not generate compensable delays.

3. Submittal and Shop Drawing schedule under Article 3.9.

4. Deferred Approvals under Article 3.9.

5. Time for separate contractors, including furniture installation and start up activities, under Article 6.1.

6. Coordination and timing of any Drawings, approvals, notifications, permitting, connection, and testing for all utilities for the Project. Article 2.1.4.

7. Testing, special events, or school activities

8.3.2.10 *Failure to include Mandatory Schedule Items*. District may withhold payment pursuant to Articles 9.3, 9.4 and 9.6. In lieu of withholding payment for failure to include Mandatory Schedule Items, after the District or Architect has notified the Contractor of failure to meet the Baseline Schedule or Updated Schedule requirements and provided a written notification of this failure and provided a written notice of Schedule preparation errors, and the Contractor fails to correct the noted deficiencies or the Contractor does not provide an updated Baseline Schedule correcting the deficiencies, then Contractor shall not be granted an extension of time for failure to obtain necessary items and approvals under Article 8.3.2 and for the time required for failure to comply with laws, building codes, and other regulations (including Title 24 of the California Code of Regulations). Contractor shall maintain all required Article 8.3.2 Schedule items in the Baseline Schedule and indicate any days that have been used as allowed in Article 8. If Contractor fails to include all Article 8.3.2 items in its Baseline Schedule or Schedule Updates

and the District either utilizes an Unapproved Schedule under Article 8.3.2.12 or does not object to the inclusion of required scheduling items, then all mandatory Schedule inclusions, including float, shall be utilized in the District's discretion. If the Contract Time is exceeded, then Contractor shall be subject to the assessment of Liquidated Damages pursuant to Article 8.4.

8.3.2.11 *Failure to Meet Requirements*. Failure of the Contractor to provide proper Schedules as required by this Article and Article 9 is a material breach of the Contract and grounds for Termination pursuant to Article 14. The District, at its sole discretion, may choose, instead, to withhold, in whole or in part, any Progress Payments or Retention amounts otherwise payable to the Contractor.

8.3.2.12 *Use of an Unapproved Baseline Schedule*. If the Baseline Schedule submitted by the Contractor is unacceptable to the District (i.e. failing to meet the requirements of Article 8.3.2) and Contractor does not incorporate or address the written comments to the Baseline Schedule and a Baseline Schedule is not approved, but due to extreme necessity, the District moves forward without an approved Baseline Schedule, Contractor shall diligently revise and meet Schedule update requirements of Article 8 and incorporate all Article 8.3.2 comments in all updates). However, for purposes of Termination pursuant to Article 14, the unapproved Baseline Schedule initially submitted shall be treated as the Baseline Schedule with durations shortened or revised to accommodate all float, all mandatory Schedule requirements under Article 8.3.2, any requirements in the Contract Documents, and all revisions by the District or Architect.

8.3.3 Update Schedules

8.3.3.1 *Updates Shall Be Based on Approved Baseline Schedule*. Except in the case where there has not been agreement as to a Baseline Schedule, the approved Baseline Schedule shall be used to build future Schedule updates. Schedule updates shall be a CPM based Schedule consistent with the Baseline Schedule requirements of 8.3.2.

In the case that no Baseline has been approved, Schedule updates shall be provided monthly and each update shall incorporate all comments and revisions noted as not complying with the requirements of Article 8.3.2. Contractor shall be held to the Article 8.3.2.12 unapproved Baseline Schedule, inclusive of all Milestones, float, comments and revisions by the District and Architect, all required Baseline Schedule Inclusions under Article 8.3.2, and any requirements in the Contract Documents.

8.3.3.2 *Schedule Updates*. Contractor shall update the approved Schedule each month to address actual start dates and durations, the percent complete on activities, actual completion dates, estimated remaining duration for the Work in progress, estimated start dates for Work scheduled to start at future times and changes in duration of Work items

8.3.3.3 *Listing of Items Causing Delays*. Schedule updates shall provide a listing of activities which are causing delay in the progress of Work and a narrative shall be provided showing a description of problem areas, anticipated delays, and impacts on the Construction Schedule. Simply stating "District Delay" or "Architect Delay" shall be an inadequate listing. Delays shall only be listed if they meet the requirements of Article 8.4.

8.3.3.4 *Recovery Schedule*. In addition to providing a schedule update every thirty (30) days, the Contractor, if requested by the Architect or District, shall take the steps necessary to improve Contractor's progress and demonstrate to the District and Architect that the Contractor has seriously considered how the lost time, the Completion Date, or the Milestones that are required to be met within the terms of the Contract. Contractor shall immediately provide a Recovery Schedule showing how Milestones

and the Completion Date will be met. In no case, shall a Recovery Schedule be provided later than ten (10) days following the request for a Recovery Schedule from the Architect or District.

a. Failure to Provide a Recovery Schedule. Shall subject Contractor to the assessment of Liquidated Damages for failure to meet the Contract Time. Refusal or failure to provide a Recovery Schedule shall be considered a substantial failure of performance and a material breach of Contract and may result in Termination of the Contract pursuant to Article 14.

b. Recovery Schedule Acceleration without Additional Cost. The District may require Contractor prepare a Recovery Schedule showing how the Project shall be accelerated, without any additional cost to the District. The District may order, without additional cost, the following:

1. Increase the number of shifts

2. Utilize overtime to recover the approved Schedule

3. Increase the days when Work occurs, including weekends, at the Project and at any manufacturer's plant.

c. Recovery Schedule Acceleration without Additional Cost. If Contractor disputes that the Recovery Schedule acceleration shall be issued without additional costs, the Contractor shall submit concurrent with Recovery Schedule acceleration notice pursuant to Articles 8.4.3 and 8.4.4.

8.4 EXTENSIONS OF TIME - LIQUIDATED DAMAGES

8.4.1 Liquidated Damages

CONTRACTOR AND DISTRICT HEREBY AGREE THAT THE EXACT AMOUNT OF DAMAGES FOR FAILURE TO COMPLETE THE WORK WITHIN THE TIME SPECIFIED IS EXTREMELY DIFFICULT OR IMPOSSIBLE TO DETERMINE. IF THE WORK IS NOT SUBSTANTIALLY COMPLETED IN THE TIME SET FORTH IN THE AGREEMENT, IT IS UNDERSTOOD THAT THE DISTRICT WILL SUFFER DAMAGES. IT BEING IMPRACTICAL AND UNFEASIBLE TO DETERMINE THE AMOUNT OF ACTUAL DAMAGE, IT IS AGREED THE CONTRACTOR SHALL PAY TO THE DISTRICT THE AMOUNT LIQUIDATED DAMAGES SET FORTH IN THE AGREEMENT, FOR EACH CALENDAR DAY OF DELAY IN REACHING SUBSTANTIAL COMPLETION (SEE ART 1.1.46). ANY LIQUIDATED DAMAGES RECOVERED BY THE DISTRICT SHALL NOT, HOWEVER, LIMIT THE DISTRICT'S RIGHT TO SEPARATELY RECOVER ANY ACTUAL OUT-OF-POCKET DAMAGES IT SUFFERS DUE TO CONTRACTOR'S DELAY. CONTRACTOR AND HIS SURETY SHALL BE LIABLE FOR THE AMOUNT THEREOF PURSUANT TO GOVERNMENT CODE SECTION 53069.85.

8.4.2 Delay

Except and only to the extent provided under Article 7 and Article 8, by signing the Agreement, Contractor agrees to bear the risk of delays to Completion of the Work and that Contractor's bid for the Project was made with full knowledge of this risk.

In agreeing to bear the risk of delays to complete the Work, Contractor understands that, except and only to the extent provided otherwise in Article 7 and 8, the occurrence of events that delay the Work shall not excuse Contractor from its obligation to achieve Completion of the Project within the Contract Time, and shall not entitle the Contractor to an adjustment to the Contract time.

8.4.3 Excusable Delay

Contractor shall not be charged for Liquidated Damages because of any delays in completion of Work which are not the fault or negligence of Contractor or its Subcontractors, arising from Rain Float or Project Float, including acts of God, as defined in Public Contract Code section 7105, acts of enemy, epidemics and quarantine restrictions. Contractor shall within five (5) calendar days of beginning of any such delay notify District in writing of causes of delay; thereupon District shall ascertain the facts and extent of delay and grant extension of time for completing Work when, in its judgment, the findings of fact justify such an extension. Extensions of time shall apply only to that portion of Work affected by delay, and shall not apply to other portions of Work not so affected. An extension of time may only be granted after proper compliance with Article 8.3 requiring preparation and submission of a properly prepared CPM schedule.

8.4.3.1 *Excusable Delay Is Not Compensable*. No extended overhead, general conditions costs, impact costs, out-of-sequence costs or any other type of compensation, by any name or characterization, shall be paid to the Contractor for any delay to any activity not designated as a critical path item on the latest approved Project schedule.

8.4.3.2 *Notification*. The Contractor shall notify the Architect in writing of any anticipated delay and its cause, in order that the Architect may take immediate steps to prevent, if possible, the occurrence or continuance of delay, and may determine whether the delay is to be considered avoidable or unavoidable, how long it continues, and to what extent the prosecution and completion of the Work might be delayed thereby.

8.4.3.3 *Extension Request*. In the event the Contractor requests an extension of Contract time for unavoidable delay, such request shall be submitted in accordance with the provisions in the Contract Documents governing changes in Work (See Article 7). When requesting time, i.e., extensions, for proposed Change Orders, they must be submitted with the proposed Change Order with full justification and documentation. If the Contractor fails to submit justification with the proposed Change Order it waives its right to a time extension at a later date. Such justification must be based on the official Contract schedule as updated at the time of occurrence of the delay or execution of Work related to any changes to the scope of Work. Blanket or general claims for extra days without specific detailed information as required herein or a blanket or general reservation of rights do not fufill the requirements of this Article and shall be denied. The justification must include, but is not limited to, the following information:

a. The duration of the activity relating to the changes in the Work and the resources (manpower, equipment, material, etc.) required to perform these activities within the stated duration.

b. Logical ties to the official Baseline Schedule or Approved Updated Schedule for the proposed changes and/or delay showing the activity/activities in the schedule whose start or completion dates are affected by the change and/or delay. (A fragment of any delay of over ten (10) days must be provided.)

The Contractor and District understand and expressly agree that insofar as Public Contract Code section 7102 may apply to changes in the Work or delays under this Contract, the actual

delays and damages, if any, and time extensions are intended to, and shall provide, the exclusive and full method of compensation for changes in the Work and construction delays.

8.4.4 Notice by Contractor Required

The Contractor shall within five (5) calendar days of beginning of any such delay notify the District in writing of causes of delay with justification and supporting documentation. In the case of a Recovery Schedule pursuant to Article 8.3.3.4, Contractor shall submit written notice concurrent with the Recovery Schedule. District will then ascertain the facts and extent of the delay and grant an extension of time for completing the Work when, in its judgment, the findings of fact justify such an extension. Extensions of time shall apply only to that portion of the Work affected by the delay and shall not apply to other portions of the Work not so affected.

Claims relating to time extensions shall be made in accordance with applicable provisions of Article 7.

8.4.4.1 *Adjustment for Compensable Delays*. The Schedule may be adjusted for a delay if, and only if, Contractor undertakes the following:

a. Contractor submits a timely COR or CO pursuant to the requirements of Article 7.

b. Contractor submits a fragnet showing the critical path delay caused by the COR, CO, Changed Condition, CCD, or ICD

c. Contractor has addressed all required float days in the Fragnet.

d. Contractor submits a complete breakdown of all costs incurred utilizing the format of Article 7.3.3

8.4.5 No Additional Compensation for Coordinating Governmental Submittals and the Resulting Work

CONTRACTOR HAS PLANNED ITS WORK AHEAD OF TIME AND IS AWARE THAT GOVERNMENTAL AGENCIES, SUCH AS THE GAS COMPANIES, ELECTRICAL UTILITY COMPANIES, WATER DISTRICTS AND OTHER AGENCIES MAY HAVE TO APPROVE CONTRACTOR PREPARED DRAWINGS OR APPROVE A PROPOSED INSTALLATION. CONTRACTOR HAS INCLUDED DELAYS AND DAMAGES WHICH MAY BE CAUSED BY SUCH AGENCIES IN CONTRACTOR'S BID AND HAS INCLUDED ADEQUATE TIME IN THE CONTRACTOR'S BASELINE SCHEDULE. FAILURE TO ADEQUATELY PLAN AND SCHEDULE IS NOT A BASIS TO USE GOVERNMENTAL DELAY FLOAT.

8.4.6 District Right to Accelerate the Work

The District may direct the Contractor to meet schedule requirements when the Work has been delayed. The District shall compensate the Contractor for the additional costs incurred by acceleration to the extent that such costs are directly attributable to the acceleration and are incurred through no fault or negligence of the Contractor.

8.4.6.1 *Management of Acceleration*. Contractor acceleration shall not include Work that is part of the scope of Work detailed in the Plans and Specifications. Instead, the acceleration costs

shall be premium or overtime and quantifiable additional work added to the Project meant to accelerate the Project. Contractor is directed to keep consistent crews on the Project so time can be tracked. If crews are circulated off the Project or crews brought in only for overtime, the District may be charged for Contract Work and not accelerated time. In such case, the District may object to the costs submitted.

8.4.6.2 *Costs for Acceleration*. Cost for Acceleration shall be supported by backup documentation, and time sheets signed by the Inspector for each day work has been performed, at or near the time when the Work was performed. A listing on the time sheet shall document all labor, materials and services utilized that day and provide areas of work, and amount of work performed. Contractor shall comply with submission requirements of Article 7.7.

ARTICLE 9
PAYMENTS AND COMPLETION

9.1 CONTRACT SUM

The Contract Sum or Contract Price is stated in the Agreement and, including authorized adjustments, is the total amount payable by the District to the Contractor for performance of the Work under the Contract Documents.

9.2 COST BREAKDOWN

9.2.1 Required Information

Contractor shall furnish the following:

a. Within ten (10) days after Notice to Proceed, a detailed breakdown of the Contract Price (hereinafter "Schedule of Values") for each Project, Site, building, Milestone or other meaningful method to measure the level of Project Completion as determined by the District shall be submitted as a Submittal for the Project.;

b. Within ten (10) days after the date of the Notice to Proceed, a schedule of estimated monthly payment requests due the Contractor showing the values and construction time of the various portions of the Work to be performed by it and by its Subcontractors or material and equipment suppliers containing such supporting evidence as to its correctness as the District may require;

c. Within ten (10) days after the date of the Notice to Proceed, address, telephone number, telecopier number, California State Contractors License number, classification and monetary value of all subcontracts for parties furnishing labor, material, or equipment for completion of the Project.

9.2.2 Information and Preparation of Schedule of Values

9.2.2.1 *Break Down of Schedule of Values*. Schedule of Values shall be broken down by Project, site, building, Milestone, or other meaningful method to measure the level of Project Completion as determined by the District.

9.2.2.2 *Based on Contractor Bid Costs.* The Schedule of Values shall be based on the costs from Contractor's bid to the District. However, the submission of the Schedule of Values shall not be front loaded so the Contractor is paid a greater value than the value of the Work actually performed and shall not shift funds from parts of the Project that are later to Work that is performed earlier.

9.2.2.3 Largest Dollar Value for Each Line Item. Identify Subcontractors and materials suppliers proposed to provide portions of Work equal to or greater than ten thousand dollars ($10,000) or one-half of one percent (0.5%) of their Contract Price, whichever is less.

9.2.2.4 *Allowances*. Any Allowances provided for in the Contract shall be a line item in the Schedule of Values.

9.2.2.5 *Labor and Materials Shall Be Separate*. Labor and Materials shall be broken into two separate line items unless specifically agreed in writing by the District.

9.2.3 District Approval Required

The District shall review all submissions received pursuant to Article 9.2 in a timely manner. All submissions must be approved by the District before becoming the basis of any payment.

9.3 PROGRESS PAYMENTS

9.3.1 Payments to Contractor

Unless there is a resolution indicating that the Work for the Project is substantially complex, within thirty (30) days after approval of the Request for Payment, Contractor shall be paid a sum equal to ninety-five percent (95%) of the value of the Work performed (as certified by Architect and Inspector and verified by Contractor) up to the last day of the previous month, less the aggregate of previous payments. In the case of a Project designated substantially complex, the sum paid to the Contractor shall be equal to ninety percent (90%) of the value of the Work performed (as certified by the Architect and Inspector and verified by Contractor). The value of the Work completed shall be the Contractor's best estimate. Work completed as estimated shall be an approximation or estimate only and no mistake, inaccuracy, error or falsification in said any approved estimate shall operate to release the Contractor, or any Surety upon any bond, from damages arising from such Work, or from the District's enforcement of each and every provision of this Contract including but not limited to the Performance Bond and Payment Bond. The District shall have the right to subsequently to correct any mistake, inaccuracy, error or falsification made or otherwise set forth in any approved Request for Payment and such correction may occur in any future Payment Application or in the Retention Payment to the Contractor. No Surety upon any bond shall be relieved, released or exonerated of its obligations under this Contract or any applicable bond when the District is unable to correct an overpayment to the Contractor due to any abandonment by the Contractor or termination by the District.

The Contractor shall not be entitled to have any payment requests processed, or be entitled to have any payment made for Work performed, so long as any lawful or proper direction given by the District concerning the Work, or any portion thereof, remains incomplete.

Notwithstanding anything to the contrary stated above, the Contractor may include in its Request for Payment the value of any structural steel, glue laminated beams, trusses, bleachers and other such custom-made materials prepared specifically for the Project and unique to the Project so long as all of the following requirements are satisfied:

a. The aggregate cost of materials stored off-site shall not exceed Twenty Five Thousand Dollars ($25,000) at any time or as otherwise agreed to be District in writing;

b. Title to such materials shall be vested in the District as evidenced by documentation satisfactory in form and substance to the District, including, without limitation, recorded financing statements, UCC filings and UCC searches;

c. With each Contractor Request for Payment, the Contractor shall submit to the District a written list identifying each location where materials are stored off-site (which must be a bonded warehouse) and the value of the materials at each location. The Contractor shall procure insurance satisfactory to the District (in its

reasonable discretion) for materials stored off-site in an amount not less than the total value thereof;

d. The consent of any Surety shall be obtained to the extent required prior to payment for any materials stored off-site;

e. Representatives of the District shall have the right to make inspections of the storage areas at any time; and

f. Such materials shall be: (1) protected from diversion, destruction, theft and damage to the reasonable satisfaction of the District; (2) specifically marked for use on the Project; and (3) segregated from other materials at the storage facility.

9.3.2 Purchase of Materials and Equipment and Cost Fluctuations

The Contractor is required to order, obtain, and store materials and equipment sufficiently in advance of its Work at no additional cost or advance payment from District to assure that there will be no delays. Contractor understands that materials fluctuate in value and shall have adequately addressed market fluctuations through agreements with Contractor vendors or by other means. Contractor further understands and incorporates into Contractor's bid cost any wage rate increases during the Project for the Contractor's labor force as well as all other Subcontractor and vendor labor forces. District shall not be responsible for market fluctuations in costs or labor rate increases during the Project. Contractor further has incorporated any and all cost increases in areas of Work where there may be schedule variations so that cost increases are not passed through to the District.

9.3.3 No Waiver

No payment by District hereunder shall be interpreted so as to imply that District has inspected, approved, or accepted any part of the Work. Contractor specifically understands that Title 24 Section 4-343 which states:

> "It is the duty of the contractor to complete the work covered by his or her contract in accordance with the approved Plans and Specifications therefore. The contractor in no way is relieved of any responsibility by the activities of the Architect, Engineer, Inspector or DSA in the performance of such duties... In no case, however, shall the instruction of the Architect or registered Engineer be construed to cause work to be done with is not in conformity with the approved Plans, Specifications, and change orders..."

Notwithstanding any payment, the District may enforce each and every provision of this Contract which includes, but is not limited to, the Performance Bond and Payment Bond. The District may correct any error subsequent to any payment. In no event shall the Contractor or the Surety be released or exonerated from performance under this Contract when the District overpays the Contractor based upon any mistake, inaccuracy, error or falsification in any estimate that is included in any Request for Payment.

9.3.4 Issuance of Certificate of Payment

The Architect shall, within seven (7) days after receipt of the Contractor's Application for Payment, either approve such payment or notify the Contractor in writing of the Architect's reasons for withholding approval in whole or in part as provided in Article 9.6. The review of the Contractor's Application for Payment by the Architect is based on the Architect's observations at the Project and the

data comprising the Application for Payment that the Work has progressed to the point indicated and that, to the best of the Architect's knowledge, information, and belief, the quality of the Work is in accordance with the Contract Documents. In some cases, the Architect may act upon or rely on the evaluation of the Work by the Inspector. This review of Payment Applications is sometimes called a "Pencil Draft." District's return of a Pencil Draft shall constitute the District's dispute of the Payment Application that has been submitted. Contractor shall promptly respond to Pencil Drafts or Contractor's Payment Applications may be delayed. Contractor's failure to promptly respond to a Pencil Draft shall qualify as a delay in the prompt payment of a Request for Payment or Request for Retention. The foregoing representations are subject to: (1) an evaluation of the Work for conformance with the Contract Documents, (2) results of subsequent tests and inspections, (3) minor deviations from the Contract Documents correctable prior to completion, and (4) specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute the Contractor's verified representation that the Contractor is entitled to payment in the amount certified.

9.3.5 Payment of Undisputed Contract Payments

In accordance with Public Contract Code section 7100, payments by the District to the Contractor for any and all undisputed amounts (including all Progress Payments, Final Payments or Retention Payment) is contingent upon submission of a proper and accurate Payment Application and the Contractor furnishing the District with a release of all Claims against the District related to such undisputed amounts. Disputed Contract Claims in stated amounts may be specifically excluded by the Contractor from the operation of the release. If, however, the Contractor specifically excludes any Claims, the Contractor shall provide details such as a specific number of disputed days or costs of any such exclusion in accordance with Articles 4.6 and 7.7.

9.4 APPLICATIONS FOR PROGRESS PAYMENTS

9.4.1 Procedure

9.4.1.1 *Application for Progress.* On or before the fifth (5th) day of each calendar month during the progress of the Work, Contractor shall submit to the Architect an itemized Application for Progress Payment for operations completed. Such application shall be notarized, if required, and supported by the following or such portion thereof as Architect requires:

1. The amount paid to the date of the Payment Application to the Contractor, to all its Subcontractors, and all others furnishing labor, material, or equipment for its Contract;

2. The amount being requested under the Payment Application by the Contractor on its own behalf and separately stating the amount requested on behalf of each of the Subcontractors and all others furnishing labor, material, and equipment under the Contract;

3. The balance that will be due to each of such entities after said payment is made;

4. A certification that the As-Built Drawings and Annotated Specifications are current;

5. Itemized breakdown of Work done for the purpose of requesting partial payment;

6. An updated or approved Baseline Schedule or other Schedule updates in conformance with Article 8;

7. Failure to submit an updated Schedule for the month or any previous month;

8. The additions to and subtractions from the Contract Price and Contract Time;

9. A summary of the Retention held;

10. Material invoices, evidence of equipment purchases, rentals, and other support and details of cost as the District may require from time to time;

11. The percentage of completion of the Contractor's Work by line item;

12. An updated Schedule of Values from the preceding Application for Payment;

13. Prerequisites for Progress Payments; and

14. Any other information or documents reasonably requested by the District, Architect, Inspector or CM (if applicable).

9.4.1.2 *First Payment Request.* The following items, if applicable, must be completed before the first payment request will be accepted for processing:

1. Installation of the Project sign;

2. Receipt by Architect of Submittals;

3. Installation of field office;

4. Installation of temporary facilities and fencing;

5. Submission of documents listed in the Article 9.2 relating to Contract Price breakdown;

6. Preliminary schedule analysis, due within 10 days after Notice to Proceed;

7. Contractor's Baseline Schedule (to be CPM based in conformance with Article 8);

8. Schedule of unit prices, if applicable;

9. Submittal Schedule;

10. Copies of necessary permits;

11. Copies of authorizations and licenses from governing authorities;

12. Initial progress report;

13. Surveyor qualifications;

14. Written acceptance of District's survey of rough grading, if applicable;

15. List of all Subcontractors, with names, license numbers, telephone numbers, and scope of work;

16. All bonds and insurance endorsements; and

17. Resumes of General Contractor's Project Manager, and if applicable, job site secretary, record documents recorder, and job site Superintendent.

9.4.1.3 *Second Payment Request.* The second payment request will not be processed until all Submittals and Shop Drawings have been accepted for review by the Architect.

9.4.1.4 *All Payment Requests.* No payment requests will be processed unless Contractor has submitted copies of the certified payroll records for the Work which correlates to the payment request and a proper CPM schedule pursuant to Article 8 is submitted.

9.4.1.5 *Final Payment Application (90% or 95%).* See Article 9.11.1

9.4.1.6 *Final Payment Application (100%).* See Article 9.11.3

9.5 STOP NOTICE CLAIMS AND WARRANTY OF TITLE

The Contractor warrants title to all Work. The Contractor further warrants that all Work is free and clear of liens, claims, security interests, stop notices, or encumbrances in favor of the Contractor, Subcontractors, material and equipment suppliers, or other persons or entities making a claim by reason of having provided labor, materials, and equipment relating to the Work. Failure to keep work free of liens, stop notices, claims, security interests or encumbrances is grounds to make a claim against Contractor's Payment and Performance Bond to immediately remedy and defend.

If a lien or stop notice of any nature should at any time be filed against the Work or any District property, by any entity which has supplied material or services at the request of the Contractor, Contractor and Contractor's Surety shall promptly, on demand by District and at Contractor's and Surety's own expense, take any and all action necessary to cause any such lien or stop notice to be released or discharged immediately therefrom.

If the Contractor fails to furnish to the District within ten (10) calendar days after written demand by the District, satisfactory evidence that a lien or stop notice has been so released, discharged, or secured, then District may discharge such indebtedness and deduct the amount required therefor, together with any and all losses, costs, damages, and attorney's fees and expense incurred or suffered by District from any sum payable to Contractor under the Contract. In addition, any liens, stop notices, claims, security interests or encumbrances shall trigger the indemnification requirements under Article 3.15 and the Agreement Form, and shall act as a trigger under Civil Code section 2778 and 2779 requiring reimbursement for any and all costs following the District's written demand has been made. Any withholdings by the District for stop notices in accordance with Civil Code section 9358 shall not be a basis by the Contractor to make a Claim for interest penalties under Public Contract Code sections 7107 or 20104.50.

9.6 DECISIONS TO WITHHOLD PAYMENT

9.6.1 Reasons to Withhold Payment

The District may withhold payment in whole, or in part, to the extent reasonably necessary to protect the District if, in the District's opinion, the representations to the District required by Article 9.4 cannot be made. The District may withhold payment, in whole, or in part, to such extent as may be necessary to protect the District from loss because of, but not limited to:

a. Defective Work not remedied;

b. Stop notices served upon the District;

c. Liquidated Damages assessed against the Contractor;

d. The cost of Completion of the Contract if there exists reasonable doubt that the Work can be Completed for the unpaid balance of any Contract Price or by the completion date;

e. Damage to the District or other contractor;

f. Unsatisfactory prosecution of the Work by the Contractor;

g. Failure to store and properly secure materials;

h. Failure of the Contractor to submit on a timely basis, proper and sufficient documentation required by the Contract Documents, including, without limitation, acceptable monthly progress schedules, Shop Drawings, Submittal schedules, Schedule of Values, Product Data and samples, proposed product lists, executed Change Order, Construction Change Documents, and verified reports;

i. Failure of the Contractor to maintain As-Built Drawings;

j. Erroneous estimates by the Contractor of the value of the Work performed, or other false statements in an Payment Application;

k. Unauthorized deviations from the Contract Documents (including but not limited to Unresolved Notices of Deviations (DSA Form 154));

l. Failure of the Contractor to prosecute the Work in a timely manner in compliance with established progress schedules and completion dates.;

m. Failure to properly pay prevailing wages as defined in Labor Code section 1720, et seq.;

n. Failure to properly maintain or clean up the Site;

o. Payments to indemnify, defend, or hold harmless the District;

p. Any payments due to the District including but not limited to payments for failed tests, or utilities changes or permits;

q. Failure to submit an acceptable Baseline Schedule or any Schedule or Schedule update in accordance with Article 8;

r. Failure to pay Subcontractor or suppliers as required by Article 9.8.1;

s. Failure to secure warranties, including the cost to pay for warranties;

t. Failure to provide releases from material suppliers or Subcontractors when requested to do so;

u. Items deducted pursuant to Article 2.2;

v. Incomplete Punch List items under Article 9.9.1.2 which have gone through the Article 2.2 process; or

w. Allowances that have not been used.

9.6.2 Reallocation of Withheld Amounts

District may, in its discretion, apply any withheld amount to payment of outstanding claims or obligations as defined in Article 9.6.1 and 9.5. In so doing, District shall make such payments on behalf of Contractor. If any payment is so made by District, then such amount shall be considered as a payment made under Contract by District to Contractor and District shall not be liable to Contractor for such payments made in good faith. Such payments may be made without prior judicial determination of claim or obligation. District will render Contractor an accounting of such funds disbursed on behalf of Contractor.

If Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents or fails to perform any provision thereof, District may, after ten (10) calendar days written notice to the Contractor and without prejudice to any other remedy make good such deficiencies. The District shall adjust the total Contract price by reducing the amount thereof by the cost of making good such deficiencies. If District deems it inexpedient to correct Work which is damaged, defective, or not done in accordance with Contract provisions, an equitable reduction in the Contract Price (of at least 150% of the estimated reasonable value of the nonconforming Work) shall be made therefor.

9.6.3 Payment After Cure

When the grounds for declining approval are removed, payment shall be made for amounts withheld because of them. No interest shall be paid on any retainage or amounts withheld due to the failure of the Contractor to perform in accordance with the terms and conditions of the Contract Documents.

9.7 NONCONFORMING WORK

Contractor shall promptly remove from premises all Work identified by District as failing to conform to the Contract whether incorporated or not. Contractor shall promptly replace and re-execute its own Work to comply with the Contract without additional expense to District and shall bear the expense of making good all Work of other contractors destroyed or damaged by such removal or replacement.

If Contractor does not remove such Work which has been identified by District as failing to conform to the Contract Documents within a reasonable time, fixed by written notice, District may remove it and may store the material at Contractor's expense. If Contractor does not pay expenses of such removal within ten (10) calendar days' time thereafter, District may, upon ten (10) calendar days' written notice, sell such

materials at auction or at private sale and shall account for net proceeds thereof, after deducting all costs and expenses that should have been borne by Contractor.

9.8 SUBCONTRACTOR PAYMENTS

9.8.1 Payments to Subcontractors

No later than ten (10) days after receipt, or pursuant to Business and Professions Code section 7108.5, the Contractor shall pay to each Subcontractor, out of the amount paid to the Contractor on account of such Subcontractor's portion of the Work, the amount to which said Subcontractor is entitled. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

9.8.2 No Obligation of District for Subcontractor Payment

The District shall have no obligation to pay, or to see to the payment of, money to a Subcontractor except as may otherwise be required by law.

9.8.3 Payment Not Constituting Approval or Acceptance

An approved Request for Payment, a progress payment, a Certificate of Substantial Completion, or partial or entire use or occupancy of the Project by the District shall not constitute acceptance of Work that is not in accordance with the Contract Documents.

9.8.4 Joint Checks

District shall have the right, if necessary for the protection of the District, to issue joint checks made payable to the Contractor and Subcontractors and material or equipment suppliers. The joint check payees shall be responsible for the allocation and disbursement of funds included as part of any such joint payment. In no event shall any joint check payment be construed to create any contract between the District and a Subcontractor of any tier, any obligation from the District to such Subcontractor, or rights in such Subcontractor against the District. The District may choose to issue joint checks at District's sole discretion and only after all the requirements of that particular school district and county are specifically met. Some school districts cannot issue joint checks, so the ability to issue joint checks depends on the school district and the specific circumstances.

9.9 COMPLETION OF THE WORK

9.9.1 Close-Out Procedures

9.9.1.1 *Incomplete Punch Items.* When the Contractor considers the Work Substantially Complete (See Article 1.1.46 for definition of Substantially Complete), the Contractor shall prepare and submit to the District a comprehensive list of minor items to be completed or corrected (hereinafter "Incomplete Punch Items" or "Punch List"). The Contractor and/or its Subcontractors shall proceed promptly to complete and correct the Incomplete Punch Items listed. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. Contractor is aware that Title 24 Section 4-343(a) provides:

> "RESPONSIBILITIES. IT IS THE DUTY OF THE CONTRACTOR TO COMPLETE THE WORK COVERED BY HIS OR HER CONTRACT IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS THEREFOR. THE

CONTRACTOR IN NO WAY IS RELIEVED OF ANY RESPONSIBILITY BY THE ACTIVITIES OF THE ARCHITECT, ENGINEER, INSPECTOR OR DSA IN THE PERFORMANCE OF SUCH DUTIES.

9.9.1.2 *Punch List Is Prepared Only After the Project Is Substantially Complete.* If any of the conditions noted in Article 1.1.46 as defining Substantial Completion are not met, the Inspector, Architect or District may reject Contractor's Incomplete Punch Items as premature. If the Architect and Inspector commence review of Incomplete Punch Items, all rights are reserved until the Project actually meets the definition of Substantially Complete. Liquidated Damages, warranties, and other contractual rights are not affected by Incomplete Punch Items unless otherwise addressed in these General Conditions.

Once the Inspector and the Architect determine the Project is Substantially Complete, a Certificate of Substantial Completion shall be issued. The Inspector and Architect shall prepare a Punch List of items which is an inspection report of the Work, if any, required in order to complete the Contract Documents and ensure compliance with the DSA Approved Plans so the Project may be Completed by the Contractor and a final DSA Close-Out is approved. When all Work for the Project is Complete, including Punch Lists and all Work complies with the approved Contract Documents and Change Orders, the Project has reached Final Completion.

9.9.1.3 *Time for Completion of Punch List.* Contractor shall only be given a period of no more than thirty (30) days to complete the Punch List for the Project. During the Punch List period, the Contractor's Superintendent and Project Manager shall remain engaged in the Project and shall not be removed or replaced. If the Punch List is not completed at the end of the Punch List time then Contractor shall issue a valued Punch List within 5 days after the date the Punch List time ends. If Contractor does not issue such a list, the District or Architect may issue a valued Punch List to the Contractor and withhold up to 150% of the value of the Punch List Work pursuant to Article 2.2 of this Agreement.

Failure to issue a timely written request for additional time to complete Punch List shall result in the deletion of the remaining Punch List Work pursuant to Article 2.2 and the issuance of a Deductive Change Order.

a. Extension of Time to Complete Punch List. If Contractor cannot finish the Punch List Work during the time period allotted under Article 9.9.1.3, the Contractor may make a written request for a Non-Compensable Punch List time extension accompanied by an estimate of the number of additional days it will take to complete the Punch List Work for a written consent from the District to allow continued Punch List Work. Punch List time extensions are a maximum of thirty (30) days for each request and must be accompanied by an itemized valued Punch List.

b. If there is no valued Punch List accompanying any request or if Contractor intends to undertake Punch List without the continued support and supervision of its Superintendent and Project Manager (as required under Article 3.2), the District, Construction Manager or Architect may issue a valued Punch List, reject the Punch List Time Extension and deduct 150% of the valued Punch List pursuant to Article 2.2 and proceed to Close-Out the Project. Contractor shall cease work on the Project and proceed to complete Contractor's Retention Payment Application and complete the Work for the Project required pursuant to Article 9.11.3.

9.9.1.4 *District Rejection of Written Request for Punch List Time Extensions*. Following sixty (60) Days of Punch List under Article 9.9.1.3, the District has the option of rejecting Punch List Time Extension requests. The District may proceed under Article 2.2 and deduct the value of remaining Punch List Work pursuant to Article 2.2. If the District rejects the Punch List Time Extension request then Contractor shall cease Work on the Project and proceed to Final Inspection pursuant to Article 9.11.2.

9.9.1.5 *Punch List Liquidated Damages to Compensate for Added District Project Costs.* If the total time utilized for Punch List exceeds sixty (60) days [the thirty (30) day period under Article 9.9.1.3 plus an additional thirty (30) day period that has been requested in writing], and the District grants an additional written Punch List Time Extension that exceeds sixty (60) days of Punch List, then Contactor shall be charged Liquidated Damages of at least $750 per day for continued Punch List Work to partially compensate the Inspector, Architect, and Construction Manager's extended time on the Project. This Punch List Liquidated Damage number is based on anticipated cost for an Inspector on site and additional costs for the Architect and Construction Manager to reinspect Punch List items and perform the administration of the Close-out.

Contractor received thirty (30) days without any charges for Punch List Liquidated Damages and is placed on notice pursuant to this Article 9.9.1.5 that $750 is due for each day of Punch List that exceeds sixty (60) days at $750, a cost much lower than typical (and actual) costs for Inspection, Architect and Construction Manager time required during Punch List. Starting at ninety (90) days of Punch List (an excessive number of days to complete Punch List), the District shall be entitled to adjust Punch List Liquidated Damages to an estimate of the actual costs incurred to oversee, monitor and inspect the Punch List. If costs exceed $750 per day, the anticipated extended contract charges for Inspection, Architect, Construction Manager, and any other costs that will be incurred due to the extended Punch List shall be itemized and a daily rate of Punch List Liquidated Damages shall be presented in writing to the Contractor within five (5) days following the receipt of a written request for Punch List Time Extension by the Contractor that extends the Punch List time beyond ninety (90) days. This written notice of actual Punch List Liquidated Damages may be provided to the Contractor at any time following the first written request for Punch List Time extension requested under Article 9.9.1.3. The adjusted actual Punch List Liquidated Damage amount shall be applicable as Punch List Liquidated Damages commencing on the ninetieth (90th) day of Punch List.

9.9.2 Close-Out Requirements for Final Completion of the Project

a. Utility Connections. Buildings shall be connected to water, gas, sewer, and electric services, complete and ready for use. Service connections shall be made and existing services reconnected

b. As-Builts Up to Date and Complete. The intent of this procedure is to obtain an exact "As-Built" record of the Work upon completion of the project. The following information shall be carefully and correctly drawn on the prints and all items shall be accurately located and dimensioned from finished surfaces of building walls on all As-Built Drawings

1. The exact location and elevations of all covered utilities, including valves, cleanouts, etc. must be shown on As-Built Drawings

2. Contractor is liable and responsible for inaccuracies in As-Built Drawings, even though they become evident at some future date.

3. Upon completion of the Work and as a condition precedent to approval of Retention Payment, Contractor shall obtain the Inspector's approval of the "As-Built" information. When completed, Contractor shall deliver corrected sepias and/or a Diskette with an electronic file in a format acceptable to the District.

4. District may withhold the cost to hire a draftsman and potholing and testing service to complete Record As-Built Drawings at substantial cost if the Contractor does not deliver a complete set of Record As-Built Drawings. This shall result in withholding of between $10,000 to $20,000 per building that does not have a corresponding Record As Built Drawing.

c. Any Work not installed as originally indicated on Drawings

d. All DSA Close-Out requirements (See DSA Certification Guide) Contractor is also specifically directed to Item 3.2 in the DSA Certification Guide and the applicable certificates for the DSA-311 form.

e. Submission of Form 6-C. Contractor shall be required to execute a Form 6-C as required under Title 24 Sections 4-343. The Contractor understands that the filing with DSA of a Form 6-C is a requirement to obtain final DSA Approval of the construction by Contractor and utilized to verify under penalty of perjury that the Work performed by Contractor complies with the DSA approved Contract Documents. The failure to file a DSA Form 6C has two consequences. First, the Construction of the Project will not comply with the design immunity provisions of Government Code section 830.6 and exposes the District and the individual Board members to personal liability for injuries that occur on the Project.

Secondly , under DSA IR A-20, since the Project cannot be Certified by DSA, no future or further Projects will be authorized so Contractor will have essentially condemned the campus from any future modernization or addition of new classrooms through their failure to file the DSA Form 6C.

1. *Execution of the DSA Form 6-C is Mandatory*. Refusal to execute the Form 6-C, which is a Final DSA Verified Report that all Work performed complies with the DSA approved Contract Documents is a violation of Education Code section 17312 and shall be referred to the Attorney General for Prosecution.

2. *Referral to the District Attorney for Extortion*. If the Contractor's refusal to execute the DSA Form 6C is to leverage a Dispute, Claim or Litigation, then the matter shall also be referred to the District Attorney for prosecution for extortion.

3. *Contractor shall be Responsible for All Costs to Certify the Project*. The District may certify the Project complies with Approved Plans and Specifications by utilizing the procedures under the Project Certification Guide (located at the DSA website). All costs for professionals, inspection, and testing required for an alternate Project Certification shall be the Contractor's responsibility and the District reserves its right to institute legal action against the Contractor and Contractor's Surety for all

costs to certify the Project and all costs to correct Non-Compliant Work that is discovered during the Alternate Certification Process.

f. ADA Work that must be corrected to receive DSA certification. See Article 12.2.

g. Maintenance Manuals. At least thirty (30) days prior to final inspection, three (3) copies of complete operations and maintenance manuals, repair parts lists, service instructions for all electrical and mechanical equipment, and equipment warranties shall be submitted. All installation, operating, and maintenance information and Drawings shall be bound in 8½" x 11" binders. Provide a table of contents in front and all items shall be indexed with tabs. Each manual shall also contain a list of Subcontractors, with their addresses and the names of persons to contact in cases of emergency. Identifying labels shall provide names of manufactures, their addresses, ratings, and capacities of equipment and machinery.

1. Maintenance manuals shall also be delivered in electronic media for the Project. Any demonstration videos shall also be provided on electronic media.

h. Inspection Requirements. Before calling for final inspection, Contractor shall determine that the following Work has been performed:

1. The Work has been completed.

2. All fire/ life safety items are completed and in working order.

3. Mechanical and electrical Work complete, fixtures in place, connected and tested.

4. Electrical circuits scheduled in panels and disconnect switches labeled.

5. Painting and special finishes complete.

6. Doors complete with hardware, cleaned of protective film relieved of sticking or binding and in working order.

7. Tops and bottoms of doors sealed.

8. Floors waxed and polished as specified.

9. Broken glass replaced and glass cleaned.

10. Grounds cleared of Contractor's equipment, raked clean of debris, and trash removed from Site.

11. Work cleaned, free of stains, scratches, and other foreign matter, replacement of damaged and broken material.

12. Finished and decorative work shall have marks, dirt and superfluous labels removed.

13. Final cleanup, as in Article 3.12.

14. All Work pursuant to Article 9.11.

15. Furnish a letter to District stating that the District's Representative or other designated person or persons have been instructed in working characteristics of mechanical and electrical equipment.

9.9.3 Costs of Multiple Inspections

More than two (2) requests of the District to make inspections required under Article 9.9.1 shall be considered an additional service of Architect, Inspector, Engineer or other consultants shall be the Contractor's responsibility pursuant to Article 4.5 and all subsequent costs will be prepared as a Deductive Change Order.

9.10 PARTIAL OCCUPANCY OR USE

9.10.1 District's Rights

The District may occupy or use any completed or partially completed portion of the Work at any stage. The District and the Contractor shall agree in writing to the responsibilities assigned to each of them for payments, security, maintenance, heat, utilities, damage to the Work, insurance, the period for correction of the Work, and the commencement of warranties required by the Contract Documents. If District and Contractor cannot agree as to responsibilities such disagreement shall be resolved pursuant to Article 4.6. When the Contractor considers a portion complete, the Contractor shall prepare and submit a Punch List to the District as provided under Article 9.9.1.

9.10.2 Inspection Prior to Occupancy or Use

Immediately prior to such partial occupancy or use, the District, the Contractor, and the Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

9.10.3 No Waiver

Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

9.11 COMPLETION AND FINAL PAYMENT

9.11.1 Final Payment (90% Billing if Substantially Complex Finding and 95% Billing If No Finding Is Made)

The following items must be completed before the Final Payment Application will be accepted for processing at Substantial Completion of the Project:

a. Inspector sign-off of each item in the DSA 152 Project Inspection Card;

b. The Project has reached the Punch List items under Article 9.9.1.2 and the Project has been determined to be Substantially Complete under Article 1.1.28;

c. Removal of temporary facilities and services;

d. Testing, adjusting and balance records are complete;

e. Removal of surplus materials, rubbish, and similar elements;

f. Changeover of door locks;

g. Deductive items pursuant to Article 9.6 and Article 2.2; and

h. Completion and submission of all final Change Orders for the Project.

9.11.2 Final Inspection (Punch List Completion)

Contractor shall comply with Punch List procedures under Article 9.9.1.1, and maintain the presence of Project Superintendent and Project Manager (not replacement project superintendent or project manager) until the Punch List is complete to ensure proper and timely completion of the Punch List. Under no circumstances shall Contractor demobilize its forces prior to completion of the Punch List.

Upon completion of the Work under Article 9.9.1, the Contractor shall notify the District and Architect, who shall again inspect such Work. If the Architect and the District finds the Work contained in Punch List acceptable under the Contract Documents and, therefore, the Work shall have reached Final Completion. Architect shall notify Contractor, who shall then submit to the Architect its Application for Retention Payment. This Application for Retention Payment shall contain any deductions under Article 9.6, including but not limited to incomplete Punch List items under Article 9.9.1.

Upon receipt and approval of Application for Retention Payment, the Architect shall issue a Form 6 stating that to the best of its knowledge, information, and belief, and on the basis of its observations, inspections, and all other data accumulated or received by the Architect in connection with the Work, such Work has been completed in accordance with the Contract Documents. The District shall thereupon inspect such Work and either accept the Work as complete or notify the Architect and the Contractor in writing of reasons why the Work is not complete. Upon acceptance of the Work of the Contractor as fully complete (which, absent unusual circumstances, will occur when the Punch List items have been satisfactorily completed), the District shall record a Notice of Completion with the County Recorder, and the Contractor shall, upon receipt of payment from the District, pay the amounts due Subcontractors.

If the Architect and the District find that the Work contained in the Punch List is unacceptable, then Contractor shall issue a valued Punch List within 5 days after the date the Punch List time ends. If Contractor does not issue such a list, the District or Architect may issue a valued Punch List to the Contractor and withhold up to 150% of the value of the Punch List Work pursuant to Article 2.2 of this Agreement.

9.11.3 Retainage (100% Billing for the Entire Project)

The retainage, less any amounts disputed by the District or which the District has the right to withhold pursuant to the Contract Documents (including but not limited to incomplete Punch List items under Article 9.9.1), shall be paid after approval by the District of the Application for Retention Payment, after the satisfaction of the conditions set forth in Article 9, the Final Inspection under Article 9.11.2 is completed, and after thirty-five (35) days after the acceptance of the Work and recording of the Notice of Completion by District. No interest shall be paid on any retainage, or on any amounts withheld due to a

failure of the Contractor to perform, in accordance with the terms and conditions of the Contract Documents, except as provided to the contrary in any escrow agreement between the District and the Contractor.

a. Procedures for Application for Retention Payment. The following conditions must be fulfilled prior to release of Retention Payment:

1. A full and final waiver or release of all stop notices in connection with the Work shall be submitted by Contractor, including a release of stop notice in recordable form, together with (to the extent permitted by law) a copy of the full and final release of all Stop Notice rights.

2. The Contractor shall have made all corrections, including all Punch List Items, to the Work which are required to remedy any defects therein, to obtain compliance with the Contract Documents or any requirements of applicable codes and ordinances, or to fulfill any of the orders or directions of District required under the Contract Documents.

3. Each Subcontractor shall have delivered to the Contractor all written guarantees, warranties, applications, releases from the Surety and warranty bonds (if applicable) required by the Contract Documents for its portion of the Work.

4. Contractor must have completed all requirements set forth in Article 9.9

5. Contractor must have issued a Form 6C for the Project.

6. The Contractor shall have delivered to the District all manuals and materials required by the Contract Documents.

7. The Contractor shall have completed final clean up as required by Article 3.12

8. Contractor shall have all deductive items under Article 9.6 and Article 2.2 submitted as part of the Retention Payment.

9.11.4 Recording of a Notice of Completion After Punch List Period and Final Inspection.

When the Work, or designated portion thereof, is complete or the District has completed the Article 9.6 and/or the Article 2.2 process, whichever occurs first, the District will file either a Notice of Completion or a Notice of Completion noting valued Punch List items. Valued Punch List items will be deducted from the Retention Payment.

During the time when Work is being performed on the Punch List, the Project does not meet the definition of "Complete" under Public Contract Code section 7107(c)(1) even if there is "beneficial occupancy" of the Project since that has been no "cessation of labor" on the Project. Completion of Punch List under this Article is not "testing, startup, or commissioning by the public entity or its agent." In other

words, the continuing Punch List Work is Contractor labor on the Project until each and every item of Punch List Work is complete or the time periods under Article 9.9.1 have expired.

9.11.5 Warranties

Warranties required by the Contract Documents shall commence on the date of Completion of the entire Work. Warranty periods DO NOT commence at Substantial Completion or when a particular Subcontractor work is complete. No additional charges, extras, Change Orders, or Claims may be sought for warranties commencing from the Notice of Completion.

District shall have the right to utilize equipment, test, and operate as necessary for acclimation, or testing without voiding or starting warranties. Taking beneficial occupancy shall not start warranties except in the case where the District agrees, in writing, that warranties shall commence running or where the District is taking phased occupancy of specific buildings or areas and completes separate Punch Lists as further addressed in Article 4.2.7.

9.11.6 Time for Submission of Application for Final Payment and Retention Payment (Unilateral Processing of Final and Retention Payment Application).

If Contractor submits a Final Payment Application which fails to include deductive items under Article 9.6, the District or Architect shall note this defective request for Final Payment Application. The Contractor shall be notified that specific deductive items shall be included in the Final Payment Application. If Contractor either continues to submit the Final Payment Application without deductive items under Article 9.6, or a period of 14 calendar days passes after Contractor is provided written notice of deductive items for inclusion in Final Payment Application, then District may either alter the Final Payment Application and recalculate the math on the Final Payment Application to address the Article 9.6 deductive items or process a unilateral Final Payment Application.

9.11.7 Unilateral Release of Retention

After the recordation of the Notice of Completion, or within sixty (60) days following the completion of the Punch List or the expiration of the time for completion of Punch List under Article 9.9.1, if Contractor does not make an Application for Release of Retention, the District may unilaterally release retention less any deducts under Article 9.6 and/or Article 2.2, withholds due to stop notice, or other defective work on the Project. District may also choose to unilaterally release Retention after deduction of 150% of any disputed items, which may also include items under Article 9.6 and 2.2. If a deduction pursuant to Article 9.6 is made from Retention, a letter deducting specific valued items shall be considered a notice of Default under the terms of the Escrow Agreement.

9.12 SUBSTITUTION OF SECURITIES

The District will permit the substitution of securities in accordance with the provisions of Public Contract Code section 22300 as set forth in the form contained in the Bid Documents.

ARTICLE 10
PROTECTION OF PERSONS AND PROPERTY

10.1 SAFETY PRECAUTIONS AND PROGRAMS

10.1.1 Contractor Responsibility

The Contractor shall be responsible for all damages to persons or property that occur as a result of its fault or negligence in connection with the prosecution of this Contract and shall take all necessary measures and be responsible for the proper care and protection of all materials delivered and Work performed until completion and final acceptance by the District. All Work shall be solely at the Contractor's risk, with the exception of damage to the Work caused by "acts of God" as defined in Public Contract Code section 7105(b)(2).

Contractor shall take, and require Subcontractor to take, all necessary precautions for safety of workers on the Work and shall comply with all applicable federal, state, local and other safety laws, standards, orders, rules, regulations, and building codes to prevent accidents or injury to persons on, about, or adjacent to premises where Work is being performed and to provide a safe and healthful place of employment. In addition to meeting all requirements of OSHA, Cal-OSHA, state, and local codes, Contractor shall furnish, erect and properly maintain at all times, as directed by District or Architect or required by conditions and progress of Work, all necessary safety devices, safeguards, construction canopies, signs, audible devices for protection of the blind, safety rails, belts and nets, barriers, lights, and watchmen for protection of workers and the public, and shall post danger signs warning against hazards created by such features in the course of construction. Contractor shall designate a responsible member of its organization on the Work, whose duty shall be to post information regarding protection and obligations of workers and other notices required under occupational safety and health laws, to comply with reporting and other occupational safety requirements, and to protect the life, safety and health of workers. The name and position of person so designated shall be reported to District by Contractor. Contractor shall correct any violations of safety laws, rules, orders, standards, or regulations. Upon the issuance of a citation or notice of violation by the Division of Occupational Safety and Health, such violation shall be corrected promptly.

10.1.2 Subcontractor Responsibility

Contractor shall require that Subcontractors participate in, and enforce, the safety and loss prevention programs established by the Contractor for the Project, which will cover all Work performed by the Contractor and its Subcontractors. Each Subcontractor shall designate a responsible member of its organization whose duties shall include loss and accident prevention, and who shall have the responsibility and full authority to enforce the program. This person shall attend meetings with the representatives of the various Subcontractors employed to ensure that all employees understand and comply with the programs.

10.1.3 Cooperation

All Subcontractors and material or equipment suppliers shall cooperate fully with Contractor, the District, and all insurance carriers and loss prevention engineers.

10.1.4 Accident Reports

Subcontractors shall immediately, within two (2) days, report in writing to the Contractor all accidents whatsoever arising out of, or in connection with, the performance of the Work, whether on or

off the Site, which caused death, personal injury, or property damage, giving full details and statements of witnesses. In addition, if death or serious injuries or serious damages are caused, the accident shall be reported within four (4) days by telephone or messenger. Contractor shall thereafter immediately, within two (2) days, report the facts in writing to the District and the Architect giving full details of the accident.

10.1.5 First-Aid Supplies at Site

The Contractor will provide and maintain at the Site first-aid supplies which complies with the current Occupational Safety and Health Regulations.

10.1.6 Material Safety Data Sheets and Compliance with Proposition 65

Contractor is required to have material safety data sheets available in a readily accessible place at the job site for any material requiring a material safety data sheet per the Federal "hazard communication" standard, or employees' "right-to-know law." The Contractor is also required to properly label any substance brought into the job site, and require that any person working with the material, or within the general area of the material, is informed of the hazards of the substance and follows proper handling and protection procedures.

Contractor is required to comply with the provisions of California Health and Safety Code section 25249, et seq., which requires the posting and giving of notice to persons who may be exposed to any chemical known to the State of California to cause cancer. The Contractor agrees to familiarize itself with the provisions of this Section, and to comply fully with its requirements.

10.1.7 Non-Utilization of Asbestos Material

NO ASBESTOS OR ASBESTOS-CONTAINING PRODUCTS SHALL BE USED IN THIS CONSTRUCTION OR IN ANY TOOLS, DEVICES, CLOTHING, OR EQUIPMENT USED TO EFFECT THIS CONSTRUCTION.

Asbestos and/or asbestos-containing products shall be defined as all items containing, but not limited to, chrysotile, amosite, anthophyllite, tremolite, and antinolite.

Any or all material containing greater than one-tenth of one percent (>.1%) asbestos shall be defined as asbestos-containing material.

All Work or materials found to contain asbestos or Work or material installed with asbestos-containing equipment will be immediately rejected and this Work will be removed at no additional cost to the District.

Decontamination and removal of Work found to contain asbestos or Work installed with asbestos-containing equipment shall be done only under supervision of a qualified consultant, knowledgeable in the field of asbestos abatement and accredited by the Environmental Protection Agency.

The asbestos removal contractor shall be an EPA accredited contractor qualified in the removal of asbestos and shall be chosen and approved by the asbestos consultant, who shall have sole discretion and final determination in this matter.

The asbestos consultant shall be chosen and approved by the District, who shall have sole discretion and final determination in this matter.

The Work will not be accepted until asbestos contamination is reduced to levels deemed acceptable by the asbestos consultant.

Interface of Work under this Contract with Work containing asbestos shall be executed by the Contractor at his risk and at his discretion, with full knowledge of the currently accepted standards, hazards, risks, and liabilities associated with asbestos work and asbestos-containing products. By execution of this Contract, the Contractor acknowledges the above and agrees to hold harmless District and its assigns for all asbestos liability which may be associated with this work and agrees to instruct his employees with respect to the above-mentioned standards, hazards, risks, and liabilities.

10.2 SAFETY OF PERSONS AND PROPERTY

10.2.1 The Contractor

The Contractor shall take reasonable precautions for the safety of, and shall provide reasonable protection to prevent damage, injury, or loss to:

a. Employees on the Work and other persons who may be affected thereby;

b. The Work, material, and equipment to be incorporated therein, whether in storage on or off the Site, under the care, custody, or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and

c. Other property at the Site or adjacent thereto such as trees, shrubs, lawns, walks, pavement, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

Contractor is constructive owner of Project site as more fully discussed in Article 6.2.

10.2.2 Contractor Notices

The Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations, and lawful orders of public authorities bearing on the safety of persons or property or their protection from damage, injury, or loss.

10.2.3 Safety Barriers and Safeguards

The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations, and notifying owners and users of adjacent sites and utilities.

10.2.4 Use or Storage of Hazardous Material

When use or storage of explosives, other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel. The Contractor shall notify the District any time that explosives or hazardous materials are expected to be stored on Site. Location of storage shall be coordinated with the District and local fire authorities.

10.2.5 Protection of Work

The Contractor and Subcontractors shall continuously protect the Work, the District's property, and the property of others, from damage, injury, or loss arising in connection with operations under the Contract Documents. The Contractor and Subcontractors, at their own expense, shall make good any such damage, injury, or loss, except such as may be solely due to, or caused by, agents or employees of the District.

The Contractor, at Contractor's expense, will remove all mud, water, or other elements as may be required for the proper protection and prosecution of its Work.

Contractor shall take adequate precautions to protect existing roads, sidewalks, curbs, pavements, utilities, adjoining property and structures (including, without limitation, protection from settlement or loss of lateral support), and to avoid damage thereto, and repair any damage thereto caused by construction operations. All permits, licenses, or inspection fees required for such repair Work shall be obtained and paid for by Contractor.

10.2.6 Requirements for Existing Sites

Contractor shall (unless waived by the District in writing):

a. When performing construction on existing sites, become informed and take into specific account the maturity of the students on the Site; and perform Work which may interfere with school routine before or after school hours, enclose working area with a substantial barricade, and arrange Work to cause a minimum amount of inconvenience and danger to students and faculty in their regular school activities. The Contractor shall comply with Specifications and directives of the District regarding the timing of certain construction activities in order to avoid unnecessary interference with school functioning.

b. Avoid performing any Work that will disturb students during testing.

c. Provide substantial barricades around any shrubs or trees indicated to be preserved.

d. Deliver materials to building area over route designated by Architect.

e. Take preventive measures to eliminate objectionable dust, noise, or other disturbances.

f. Confine apparatus, the storage of materials, and the operations of workers to limits indicated by law, ordinances, permits or directions of Architect; and not interfere with the Work or unreasonably encumber premises or overload any structure with materials; and enforce all instructions of District and Architect regarding signs, advertising, fires, and smoking and require that all workers comply with all regulations while on the Project site.

g. Take care to prevent disturbing or covering any survey markers, monuments, or other devices marking property boundaries or corners. If such markers are disturbed by accident, they shall be replaced by an approved land surveyor or civil engineer and all maps and records required therefrom shall be filed with county and local authorities, at no cost to the District. All filing and plan check fees shall be paid by Contractor.

h. Provide District on request with Contractor's written safety program and safety plan for each site.

10.2.7 Shoring and Structural Loading

The Contractor shall not impose structural loading upon any part of the Work under construction or upon existing construction on or adjacent to the Site in excess of safe limits, or loading such as to result in damage to the structural, architectural, mechanical, electrical, or other components of the Work. The design of all temporary construction equipment and appliances used in construction of the Work and not a permanent part thereof, including, without limitation, hoisting equipment, cribbing, shoring, and temporary bracing of structural steel, is the sole responsibility of the Contractor. All such items shall conform with the requirements of governing codes and all laws, ordinances, rules, regulations, and orders of all authorities having jurisdiction. The Contractor shall take special precautions, such as shoring of masonry walls and temporary tie bracing of structural steel Work, to prevent possible wind damage during construction of the Work. The installation of such bracing or shoring shall not damage the Work in place or the Work installed by others. Any damage which does occur shall be promptly repaired by the Contractor at no cost to the District.

10.2.8 Conformance within Established Limits

The Contractor and Subcontractors shall confine their construction equipment, the storage of materials, and the operations of workers to the limits indicated by laws, ordinances, permits, and the limits established by the District or the Contractor, and shall not unreasonably encumber the premises with construction equipment or materials.

10.2.9 Subcontractor Enforcement of Rules

Subcontractors shall enforce the District's and the Contractor's instructions, laws, and regulations regarding signs, advertisements, fires, smoking, the presence of liquor, and the presence of firearms by any person at the Site.

10.2.10 Site Access

The Contractor and the Subcontractors shall use only those ingress and egress routes designated by the District, observe the boundaries of the Site designated by the District, park only in those areas designated by the District, which areas may be on or off the Site, and comply with any parking control program established by the District, such as furnishing license plate information and placing identifying stickers on vehicles.

10.2.11 Security Services.

The Contractor shall be responsible for providing security services for the Site as needed for the protection of the Site and as determined in the District's sole discretion.

10.3 EMERGENCIES

10.3.1 Emergency Action

In an emergency affecting the safety of persons or property, the Contractor shall take any action necessary, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional

compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 7.

10.3.2 Accident Reports

The Contractor shall promptly report in writing to the District all accidents arising out of or in connection with the Work, which caused death, personal injury, or property damage, giving full details and statements of any witnesses in conformance with Article 10.1.4. In addition, if death, serious personal injuries, or serious property damages are caused, the accident shall be reported in accordance with Article 10.1.4, immediately by telephone or messenger to the District.

10.4 HAZARDOUS MATERIALS

10.4.1 Discovery of Hazardous Materials

In the event the Contractor encounters or suspects the presence on the job site of material reasonably believed to be asbestos, polychlorinated biphenyl (PCB), or any other material defined as being hazardous by § 25249.5 of the California Health and Safety Code, which has not been rendered harmless, the Contractor shall immediately stop Work in the area affected and report the condition to the District and the Architect in writing, whether or not such material was generated by the Contractor or the District. The Work in the affected area shall not thereafter be resumed, except by written agreement of the District and the Contractor, if in fact the material is asbestos, polychlorinated biphenyl (PCB), or other hazardous material, and has not been rendered harmless. The Work in the affected area shall be resumed only in the absence of asbestos, polychlorinated biphenyl (PCB), or other hazardous material, or when it has been rendered harmless by written agreement of the District and the Contractor.

10.4.2 Hazardous Material Work Limitations

In the event that the presence of hazardous materials is suspected or discovered on the Site (except in cases where asbestos and other hazardous material Work in the Contractor's responsibility), the District shall retain an independent testing laboratory to determine the nature of the material encountered and whether corrective measures or remedial action is required. The Contractor shall not be required pursuant to Article 7 to perform without consent any Work in the affected area of the Site relating to asbestos, polychlorinated biphenyl (PCB), or other hazardous material, until any known or suspected hazardous material has been removed, or rendered harmless, or determined to be harmless by District, as certified by an independent testing laboratory and approved by the appropriate government agency.

10.4.3 Indemnification by Contractor for Hazardous Material Caused by Contractor

In the event the hazardous materials on the Project Site is caused by the Contractor, the Contractor shall pay for all costs of testing and remediation, if any, and shall compensate the District for any additional costs incurred as a result of Contractor's generation of hazardous material on the Project Site. In addition, the Contractor shall defend, indemnify and hold harmless District and its agents, officers, and employees from and against any and all claims, damages, losses, costs and expenses incurred in connection with, arising out of, or relating to, the presence of hazardous material on the Project Site.

10.4.4 Terms of Hazardous Material Provision

The terms of this Hazardous Material provision shall survive the completion of the Work and/or any termination of this Contract.

ARTICLE 11
INSURANCE AND BONDS

11.1 CONTRACTOR'S LIABILITY INSURANCE

11.1.1 Insurance Requirements

Before the commencement of the Work, the Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in California with a financial rating of at least an A-VIII status as rated in the most recent edition of Best's Insurance Reports or as amended by the Supplementary General Conditions, such insurance as will protect the District from claims set forth below, which may arise out of or result from the Contractor's Work under the Contract and for which the Contractor may be legally liable, whether such Work are by the Contractor, by a Subcontractor, by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable. Any required insurance shall not contain any exclusion that applies to the type of work performed by the Contractor under the Contract Documents.

a. Claims for damages because of bodily injury, sickness, disease, or death of any person District would require indemnification and coverage for employee claim;

b. Claims for damages insured by usual personal injury liability coverage, which are sustained by a person as a result of an offense directly or indirectly related to employment of such person by the Contractor or by another person;

c. Claims for damages because of injury or destruction of tangible property, including loss of use resulting therefrom, arising from operations under the Contract Documents;

d. Claims for damages because of bodily injury, death of a person, or property damage arising out of the ownership, maintenance, or use of a motor vehicle, all mobile equipment, and vehicles moving under their own power and engaged in the Work;

e. Claims involving contractual liability applicable to the Contractor's obligations under the Contract Documents, including liability assumed by and the indemnity and defense obligations of the Contractor and the Subcontractors; and

f. Claims involving Completed Operations, Independent Contractors' coverage, and Broad Form property damage, without any exclusions for collapse, explosion, demolition, underground coverage, and excavating. (XCU)

g. Claims involving sudden or accidental discharge of contaminants or pollutants.

11.1.2 Specific Insurance Requirements

Contractor shall take out and maintain and shall require all Subcontractors, if any, whether primary or secondary, to take out and maintain:

Comprehensive General Liability Insurance with a combined single limit per occurrence of not less than $2,000,000.00 or Commercial General Liability Insurance which provides limits of not less than:

(a)	Per occurrence (combined single limit)	$2,000,000.00
(b)	Project Specific Aggregate (for this Project only)	$2,000,000.00
(c)	Products and Completed Operations (aggregate)	$2,000,000.00
(d)	Personal and Advertising Injury Limit	$1,000,000.00

In addition, provide Excess Liability Insurance coverage in the amount of Four Million Dollars ($4,000,000.00).

Any insurance deductibles in excess of $25,000.00 must be declared to and approved by the District.

Insurance Covering Special Hazards

The following Special hazards shall be covered by riders or riders to above mentioned public liability insurance or property damage insurance policy or policies of insurance, in amounts as follows:

(a)	Automotive and truck where operated in amounts	$1,000,000.00
(b)	Material Hoist where used in amounts	$1,000,000.00
(c)	Explosion, Collapse and Underground (XCU coverage)	$1,000,000.00
(d)	Hazardous Materials	$1,000,000.00

In addition, provide Excess Liability Insurance coverage in the amount of Four Million Dollars ($4,000,000.00).

Any insurance deductibles in excess of $25,000.00 must be declared to and approved by the District.

11.1.3 Subcontractor Insurance Requirements

The Contractor shall require its Subcontractors to take out and maintain public liability insurance and property damage insurance required under Article 11.1 in like amounts, excluding the

requirement for Excess Liability Insurance coverage. A "claims made" or modified "occurrence" policy shall not satisfy the requirements of Article 11.1 without prior written approval of the District.

11.1.4 Additional Insured Endorsement Requirements

The Contractor shall name, on any policy of insurance required under Article 11.1, the District, CM, Architect, Inspector, the State of California, their officers, employees, agents, volunteers and independent contractors as additional insureds. Subcontractors shall name the Contractor, the District, Architect, Inspector, the State of California, their officers, employees, agents, volunteers and independent contractors as additional insureds. The Additional Insured Endorsement included on all such insurance policies shall be an ISO CG 20 10 (04/13), or an ISO CG 20 38 (04/13), or their equivalent as determined by the District in its sole discretion, and must state that coverage is afforded the additional insured with respect to claims arising out of operations performed by or on behalf of the insured. If the additional insureds have other insurance which is applicable to the loss, such other insurance shall be on an excess or contingent basis. The insurance provided by the Contractor pursuant to 11.1 must be designated in the policy as primary to any insurance obtained by the District. The amount of the insurer's liability shall not be reduced by the existence of such other insurance.

11.2 WORKERS' COMPENSATION INSURANCE

During the term of this Contract, the Contractor shall provide workers' compensation and employer's liability insurance for all of the Contractor's employees engaged in Work under this Contract on or at the Site of the Project and, in case any of the Contractor's Work is subcontracted, the Contractor shall require the Subcontractor to provide workers' compensation insurance for all the Subcontractor's employees engaged in Work under the subcontract. Any class of employee or employees not covered by a Subcontractor's insurance shall be covered by the Contractor's insurance. In case any class of employees engaged in Work under this Contract on or at the Site of the Project is not protected under the Workers' Compensation laws, the Contractor shall provide or cause a Subcontractor to provide insurance coverage for the protection of those employees not otherwise protected. The Contractor shall file with the District certificates of insurance as required under Article 11.6 and in compliance with Labor Code § 3700.

Workers' compensation limits as required by the Labor Code, but not less than $1,000,000 and employers' liability limits of $1,000,000 per accident for bodily injury or disease.

11.3 BUILDER'S RISK/ "ALL RISK" INSURANCE

11.3.1 Course-of-Construction Insurance Requirements

The District shall maintain and cause to be maintained fire insurance for direct physical loss or damage excluding earthquake, flood and other perils (copy of owner's policy available upon request) on all work to which this Contract applies for the insurable value thereof with a deductible clause not to exceed the first $25,000.00 of each loss, including items of labor and materials connected therewith, whether in or adjacent to the structure insured; materials in place or to be used as part of the permanent construction; temporary structures, miscellaneous materials and supplies incidental to the work. District's property insurance does not cover anything not specifically named above and does not include Contractor's tools, tools owned by mechanics, equipment, scaffolding, staging, towers, and forms owned or rented by the Contractor or subcontractors, the capital value of which is not included in the work. (Contractors or Subcontractors are responsible for insuring the property until it is accepted for delivery at the site). Contractor shall be responsible for any damages and shall insure their interest for payment of damages to the work caused by perils insured by the District, up to the $25,000.00 deductible, and shall be additionally responsible for any damage to the structure or stored materials if caused by improperly installed or

unprotected work of this contract and any damages to the project, the work, the materials, or Contractor's tools, equipment, scaffolding, staging, towers and forms not covered by the District's insurance; provided that if such damage is caused by earthquake, and Contractor has installed the damaged work in accordance with applicable building standards and the contract documents, then Contractor's liability shall be limited to five percent (5%) of the amount of this Contract, in accordance with Public Contract Code section 7105.

11.4 FIRE INSURANCE

Refer to Section 11.3 Builder's Risk/ "All Risk" Insurance.

11.5 AUTOMOBILE LIABILITY

11.5.1 The District, Architect and Construction Manager, Inspectors, their directors, officers, employees, agents and volunteers shall be covered as additional insureds with respect to the ownership, operation, maintenance, use, loading or unloading of any auto owned, leased, hired or borrowed by the Contractor or for which the Contractor is responsible. Such insurance coverage shall be primary and non-contributory insurance as respects the District, Architect, Construction Manager, Project Inspector, their directors, officers, employees, agents and volunteers, or if excess, shall stand in an unbroken chain of coverage excess of the Contractor's scheduled underlying coverage. Any insurance or self-insurance maintained by the District, Architect, Construction Manager, Project Inspector, their directors, officers, employees, agents and volunteers shall be excess of the Contractor's insurance and shall not be called upon to contribute with it. The insurer shall agree to waive all rights of subrogation against the District, Architect, Construction Manager, Project Inspector, their directors, officers, employees, agents and volunteers for losses paid under the terms of the insurance policy that arise from Work performed by the Contractor.

11.5.2 Insurance Services Office Business Auto Coverage Form Number CA 0001, Code 1 (any auto) is required. Comprehensive Automobile Liability insurance to include all autos, owned, non-owned, and hired, with limits of $1,000,000 per accident for bodily injury and property damage.

11.6 OTHER INSURANCE

The Contractor shall provide all other insurance required to be maintained under applicable laws, ordinances, rules, and regulations.

11.7 PROOF OF INSURANCE

The Contractor shall not commence Work nor shall it allow any Subcontractor to commence Work under this Contract until all required insurance and certificates have been obtained and delivered in duplicate to the District for approval subject to the following requirements:

a. Certificates and insurance policies shall include the following clause:

> "This policy and any coverage shall not be suspended, voided, non-renewed, canceled, or reduced in required limits of liability or amounts of insurance or coverage until notice has been mailed via certified mail to the District. Date of cancellation or reduction may not be less than thirty (30) days after the date of mailing notice."

b. Certificates of insurance shall state in particular those insured, the extent of insurance, location and operation to which the insurance applies, the expiration date, and cancellation and reduction notices.

c. Certificates of insurance shall clearly state that the District and the Architect are named as additional insureds under the policy described and that such insurance policy shall be primary to any insurance or self-insurance maintained by District.

d. The Contractor and its Subcontractors shall produce a certified copy of any insurance policy required under this Section upon written request of the District.

11.8 COMPLIANCE

In the event of the failure of Contractor to furnish and maintain any insurance required by this Article 11, the Contractor shall be in default under the Contract. Compliance by Contractor with the requirement to carry insurance and furnish certificates or policies evidencing the same shall not relieve the Contractor from liability assumed under any provision of the Contract Documents, including, without limitation, the obligation to defend and indemnify the District and the Architect.

11.9 WAIVER OF SUBROGATION

Contractor waives (to the extent permitted by law) any right to recover against the District for damages to the Work, any part thereof, or any and all claims arising by reason of any of the foregoing, but only to the extent that such damages and/or claims are covered by property insurance and only to the extent of such coverage (which shall exclude deductible amounts) by insurance actually carried by the District.

The provisions of this Article are intended to restrict each party to recovery against insurance carriers only to the extent of such coverage and waive fully and for the benefit of each, any rights and/or claims which might give rise to a right of subrogation in any insurance carrier. The District and the Contractor shall each obtain in all policies of insurance carried by either of them, a waiver by the insurance companies thereunder of all rights of recovery by way of subrogation for any damages or claims covered by the insurance.

11.10 PERFORMANCE AND PAYMENT BONDS

11.10.1 Bond Requirements

Unless otherwise specified in the Supplemental Conditions, prior to commencing any portion of the Work, the Contractor shall furnish separate Payment and Performance Bonds for its portion of the Work which shall cover 100% faithful performance of and payment of all obligations arising under the Contract Documents and/or guaranteeing the payment in full of all claims for labor performed and materials supplied for the Work. All bonds shall be provided by a corporate Surety authorized and admitted to transact business in California as sureties.

To the extent, if any, that the Contract Price is increased in accordance with the Contract Documents, the Contractor shall, upon request of the District, cause the amount of the bonds to be increased accordingly and shall promptly deliver satisfactory evidence of such increase to the District. To the extent available, the bonds shall further provide that no change or alteration of the Contract Documents (including, without limitation, an increase in the Contract Price, as referred to above), extensions of time, or modifications of the time, terms, or conditions of payment to the Contractor will release the Surety. If the Contractor fails to furnish the required bonds, the District may terminate the Contract for cause.

11.10.2 Surety Qualification

Only bonds executed by admitted Surety insurers as defined in Code of Civil Procedure § 995.120 shall be accepted. Surety must be a California-admitted Surety and listed by the U.S. Treasury with a bonding capacity in excess of the Project cost.

11.10.3 Alternate Surety Qualifications

If a California-admitted Surety insurer issuing bonds does not meet these requirements, the insurer will be considered qualified if it is in conformance with § 995.660 of the California Code of Civil Procedure and proof of such is provided to the District.

ARTICLE 12
UNCOVERING AND CORRECTION OF WORK

12.1 COMPLIANCE WITH TITLE 24 INSTALLATION REQUIREMENTS

Contractor is aware of the requirements governing Contractor's Work under title 24 Section 4-343 which provides, in pertinent part:

4-343. Duties of the Contractor.

(a) **Responsibilities**. It is the duty of the contractor to complete the Work covered by his or her contract in accordance with the approved Plans and Specifications therefore. The contractor in no way is relieved of any responsibility by the activities of the architect, engineer, Inspector or DSA in the performance of such duties.

(b) **Performance of the Work.** The contractor shall carefully study the approved Plans and Specifications and shall plan a schedule of operations well ahead of time. If at any time it is discovered that Work is being done which is not in accordance with the approved Plans and Specifications, the contractor shall correct the Work immediately. All inconsistencies or items which appear to be in error in the Plans and Specifications shall be promptly called to the attention of the architect or registered engineer, through the Inspector, for interpretation or correction. In no case, however, shall the instruction of the architect or registered engineer be construed to cause Work to be done which is not in conformity with the approved Plans, Specifications, and Change Orders. The contractor must notify the Project Inspector, in advance, of the commencement of construction of each and every aspect of the Work.

12.1.1 Issuance of Notices of Non-Compliance

The Inspector may issue a Notice of Non-Compliance on the Project indicating deviation from Plans and Specifications. It is Contractor's responsibility to correct all deviations from the approved Plans and Specifications unless the District has issued an Immediate Change Directive. In such case, the Contractor shall proceed with the Work with the understandings of the District as set forth in the ICD and as specifically noted in Article 7.3.

12.2 SPECIAL NOTICE OF AMERICAN'S WITH DISABILITIES ACT

Some of the requirements in the Plans and Specifications are meant to comply with the Americans with Disabilities Act ("ADA"). The requirements of the ADA are technical in nature and may appear to be minor in nature (i.e. whether a walkway or ramp has a 2% cross-slope). Contractor is warned that even the slightest deviation from the specific requirements from the ADA is considered a Civil Rights violation and subjects the District to fines of three times actual damages sustained by a handicap individual or up to $4,000 per violation and attorney's fees required to enforce the ADA violation. As a result of the significant liability and exposure associated with ADA aspects of the Contract, Contractor shall take special care to meet all ADA requirements detailed in the Plans and Specifications. Failure to comply with ADA rules that results in a Notice of Non-Compliance shall be repaired to meet ADA requirements promptly. In addition, any ADA violations that are not identified by Inspector or Architect that are later identified shall be repaired and charged back to the Contractor through a Deductive Change Order.

12.2.1 Indemnification of ADA Claims

ADA claims arising from failure to comply with Plans and Specifications shall be indemnified, held harmless and defended by Contractor. Further, any withholdings for ADA violations under Article 9.6 shall include potential redesign costs and an accelerated repair costs due to the potential for ADA claims arising from DSA posting of ADA violations on the Project.

12.3 UNCOVERING OF WORK

12.3.1 Uncovering Work for Required Inspections

Work shall not be covered without the Inspector's review and the Architect's knowledge that the Work conforms with the requirements of the approved Plans and Specifications (except in the case of an ICD under Article 7.3). Inspector must be timely notified of inspections and of new areas so Work can be inspected at least 48 hours before opening a new area (For example, see DSA Form 156 for Commencement/Completion of Work Notification which requires "at least 48 hour" advance notification of a new area). An Inspector must comply with DSA protocols for signing each category or phase of Work under DSA Form 152 (in compliance with the Form 152 Manual) or a Notice of Deviation (DSA Form 154) will be issued requiring the Work that was not inspected be uncovered for inspection. Thus, if a portion of the Work is covered without inspection or Architect approval, is subject to a Notice of Non-Compliance for being undertaken without inspection, or otherwise not in compliance with the Contract Documents, after issuance of a Written Notice of Non-Compliance (Form 154) or a written notice to uncover Work, Contractor shall promptly uncover all Work (which includes furnishing all necessary facilities, labor, and material) for the Inspector's or the Architect's observation and be replaced at the Contractor's expense without change in the Contract Sum or Time.

12.3.2 Costs for Inspections Not Required

If a portion of the Work has been covered is believed to be Non-Conforming to the Plans and Specifications, even if the Form 152 for the category of Work has been signed by the Inspector, the Inspector or the Architect may request to see such Work, and it shall be promptly uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncover and replacement shall, by appropriate Change Order and shall, be charged to the District. If such Work is not in accordance with Contract Documents, the Contractor shall be responsible for all costs to uncover the Work, delays incurred to uncover the Work, and Contractor shall pay all costs to correct the incorrectly construction condition unless the condition was caused by the District or a separate contractor, in which event the District shall be responsible for payment of such costs to the Contractor.

12.4 CORRECTION OF WORK

12.4.1 Correction of Rejected Work

The Contractor shall promptly correct the Work rejected by the Inspector or the District upon recommendation of the Architect as failing to conform to the requirements of the Contract Documents, whether observed before or after Completion and whether or not Fabricated, installed, or completed. The Contractor shall bear costs of correcting the rejected Work, including cost for delays that may be incurred by Contractor or Subcontractors, the cost for additional testing, inspections, and compensation for the Inspector's or the Architect's services and expenses made necessary thereby (including costs for preparing a CCD, DSA CCD review fees, and additional inspection and special inspection costs).

12.4.2 Two-Year Warranty Corrections

If, within two (2) years after the date of Completion of the Work or a designated portion thereof, or after the date for commencement of warranties established under Article 9.9.1, or by the terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the District to do so unless the District has previously given the Contractor a written acceptance of such condition. This period of Two (2) years shall be extended with respect to portions of the Work first performed after Completion by the period of time between Completion and the actual performance of the Work. This obligation under this Article 12.4.2 shall survive acceptance of the Work under the Contract and termination of the Contract. The District shall give such notice promptly after discovery of the condition.

12.4.3 District's Rights if Contractor Fails to Correct

If the Contractor fails to correct nonconforming Work within a reasonable time, the District may correct the Work and seek a Deductive Change Order, pursuant to Article 9.6 or Article 2.2.

ARTICLE 13
MISCELLANEOUS PROVISIONS

13.1 GOVERNING LAW

The Contract shall be governed by the law of the place where the Project is located.

13.2 SUCCESSORS AND ASSIGNS

The District and the Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to the other party hereto and to partners, successors, assigns, and legal representatives of such other party in respect to covenants, agreements, and obligations contained in the Contract Documents. Neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

13.3 WRITTEN NOTICE

In the absence of specific notice requirements in the Contract Documents, written notice shall be deemed to have been duly served if delivered in person to the individual, member of the firm or entity, or to an officer of the corporation for which it was intended, or if delivered at or sent by registered or certified mail to the last business address known to the party giving notice.

13.4 RIGHTS AND REMEDIES

13.4.1 Duties and Obligations Cumulative

Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

13.4.2 No Waiver

No action or failure to act by the Inspector, the District, or the Architect shall constitute a waiver of a right or duty afforded them under the Contract Documents, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed in writing.

13.5 TESTS AND INSPECTIONS

13.5.1 Compliance

Tests, inspections, and approvals of portions of the Work required by the Contract Documents will comply with Division 1, Title 24, and with all other laws, ordinances, rules, regulations, or orders of public authorities having jurisdiction.

13.5.2 Independent Testing Laboratory

The District will select and pay an independent testing laboratory to conduct all tests and inspections. Selection of the materials required to be tested shall be made by the laboratory or the District's

representative and not by the Contractor. See Articles 3.13.1 and 4.3.6 regarding costs or expenses of inspection or testing outside of the Project Site.

13.5.3 Advance Notice to Inspector

The Contractor shall notify the Inspector a sufficient time in advance of its readiness for required observation or inspection so that the Inspector may arrange for same. The Contractor shall notify the Inspector a sufficient time in advance of the manufacture of material to be supplied under the Contract Documents which must, by terms of the Contract Documents, be tested in order that the Inspector may arrange for the testing of the material at the source of supply.

13.5.4 Testing Off-Site

Any material shipped by the Contractor from the source of supply, prior to having satisfactorily passed such testing and inspection or prior to the receipt of notice from said Inspector that such testing and inspection will not be required, shall not be incorporated in the Work.

13.5.5 Additional Testing or Inspection

If the Inspector, the Architect, the District, or public authority having jurisdiction determines that portions of the Work require additional testing, inspection, or approval not included under Article 13.5.1, the Inspector will, upon written authorization from the District, make arrangements for such additional testing, inspection, or approval. The District shall bear such costs except as provided in Articles 13.5.6 and 13.5.7.

13.5.6 Costs for Retesting

If such procedures for testing, inspection, or approval under Articles 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, the Contractor shall bear all costs arising from such failure, including those of re-testing, re-inspection, or re-approval, including, but not limited to, compensation for the Architect's services and expenses. Any such costs shall be paid by the District, invoiced to the Contractor, and deducted from the next Progress Payment.

13.5.7 Costs for Premature Test

In the event the Contractor requests any test or inspection for the Project and is not completely ready for the inspection, the Contractor shall be invoiced by the District for all costs and expenses resulting from that testing or inspection, including, but not limited to, the Inspector's and Architect's fees and expenses, and the amount of the invoice of shall be deducted from the next Progress Payment.

13.6 TRENCH EXCAVATION

13.6.1 Trenches Greater Than Five Feet

Pursuant to Labor Code section 6705, if the Contract Price exceeds $25,000 and involves the excavation of any trench or trenches five (5) feet or more in depth, the Contractor shall, in advance of excavation, submit to the District or a registered civil or structural engineer employed by the District or Architect, a detailed plan showing the design of shoring for protection from the hazard of caving ground during the excavation of such trench or trenches.

13.6.2 Excavation Safety

If such plan varies from the Shoring System Standards established by the Construction Safety Orders, the plan shall be prepared by a registered civil or structural engineer, but in no case shall such plan be less effective than that required by the Construction Safety Orders. No excavation of such trench or trenches shall be commenced until said plan has been accepted by the District or by the person to whom authority to accept has been delegated by the District.

13.6.3 No Tort Liability of District

Pursuant to Labor Code § 6705, nothing in this Article shall impose tort liability upon the District or any of its employees.

13.6.4 No Excavation without Permits

The Contractor shall not commence any excavation Work until it has secured all necessary permits including the required CAL OSHA excavation/shoring permit. Any permits shall be prominently displayed on the Site prior to the commencement of any excavation.

13.7 WAGE RATES, TRAVEL, AND SUBSISTENCE

13.7.1 Wage Rates

Pursuant to the provisions of Article 2 (commencing at § 1720), Chapter 1, Part 7, Division 2, of the Labor Code, the District has obtained the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work in the locality in which this public works project is to be performed for each craft, classification, or type of worker needed for this Project from the Director of the Department of Industrial Relations ("Director"). These rates are on file at the administrative office of the District and are also available from the Director of the Department of Industrial Relations. Copies will be made available to any interested party on request. The Contractor shall post a copy of such wage rates at appropriate, conspicuous, weatherproof points at the Site.

Any worker employed to perform Work on the Project, but such Work is not covered by any classification listed in the published general prevailing wage rate determinations or per diem wages determined by the Director of the Department of Industrial Relations, shall be paid not less than the minimum rate of wages specified therein for the classification which most nearly corresponds to the employment of such person in such classification.

13.7.2 Holiday and Overtime Pay

Holiday and overtime work, when permitted by law, shall be paid for at the rate set forth in the prevailing wage rate determinations issued by the Director of the Department of Industrial Relations or at least one and one-half (1½) times the specified basic rate of per diem wages, plus employer payments, unless otherwise specified in the Contract Documents or authorized by law.

13.7.3 Wage Rates Not Affected by Subcontracts

The Contractor shall pay and shall cause to be paid each worker engaged in the execution of the Work on the Project not less than the general prevailing rate of per diem wages determined by the Director, regardless of any contractual relationship which may be alleged to exist between the Contractor or any Subcontractor and such workers.

13.7.4 Per Diem Wages

The Contractor shall pay and shall cause to be paid to each worker needed to execute the Work on the Project per diem wages including, but not limited to, employer payments for health and welfare, pensions, vacation, travel time and subsistence pay as provided for in Labor Code §1773.1.

13.7.5 Forfeiture and Payments

Pursuant to Labor Code §1775, the Contractor shall forfeit to the District, not more than Two Hundred Dollars ($200.00) for each calendar day, or portion thereof, for each worker paid less than the prevailing wages rates as determined by the Director of the Department of Industrial Relations, for the work or craft in which the worker is employed for any Work done under the Agreement by the Contractor or by any Subcontractor under it. The amount of the penalty shall be determined by the Labor Commissioner and shall be based on consideration of: (1) whether the Contractor or Subcontractor's failure to pay the correct rate of per diem wages was a good faith mistake and, if so, the error was promptly and voluntarily correct upon being brought to the attention of the Contractor or Subcontractor; and (2) whether the Contractor or Subcontractor has a prior record of failing to meet its prevailing wage obligations.

13.7.6 Monitoring and Enforcement by Labor Commissioner

Monitoring and enforcement of the prevailing wage laws and related requirements will be performed by the Labor Commissioner/ Department of Labor Standards Enforcement (DLSE). The Contractor and all Subcontractors shall be required to furnish, at least monthly, certified payroll records directly to the Labor Commissioner in accordance with Labor Code section 1771.4. All payroll records shall be furnished in a format required by the Labor Commissioner. The Contractor and all Subcontractors must sign up for, and utilize, the Labor Commissioner's electronic certified payroll records submission system. The District will have direct and immediate access to all CPRs for the Project that are submitted through the Labor Commissioner's system. The District can use this information for any appropriate purpose, including monitoring compliance, identifying suspected violations, and responding to Public Records Act requests.

The Labor Commissioner and DLSE may conduct various compliance monitoring and enforcement activities including, but not limited to, confirming the accuracy of payroll records, conducting worker interviews, conducting audits, requiring submission of itemized statements prepared in accordance with Labor Code section 226, and conducting random in-person inspections of the Project site ("On-Site Visits"). On-Site Visits may include inspections of records, inspections of the Work site and observation of work activities, interviews of workers and others involved with the Project, and any other activities deemed necessary by the Labor Commissioner/DLSE to ensure compliance with prevailing wage requirements. The Labor Commissioner/DLSE shall have free access to any construction site or other place of labor and may obtain any information or statistics pertaining to the lawful duties of the Labor Commissioner/DLSE.

Any lawful activities conducted or any requests made by the Labor Commissioner/DLSE shall not be the basis for any delays, claims, costs, damages or liability of any kind against the District by the Contractor. Contractor and all Subcontractors shall cooperate and comply with any lawful requests by the Labor Commissioner/ DLSE. The failure of the Labor Commissioner, DLSE, or any other entity related to the Department of Industrial Relations to comply with any requirement imposed by the California Code of Regulations, Title 8, Chapter 8 shall not of itself constitute a defense to the failure to pay prevailing wages or to comply with any other obligation imposed by Division 2, Part 7, Chapter 1 of the Labor Code.

Prior to commencing any Work on the Project, the Contractor shall post the notice/poster required under Title 8, California Code of Regulations, Section 16451(d) in both English and Spanish at a conspicuous, weatherproof area at the Project site. The required notice/poster is available on the Labor Commissioner's website.

13.8 RECORDS OF WAGES PAID

13.8.1 Payroll Records

a. Pursuant to §1776 of the Labor Code, each Contractor and Subcontractor shall keep an accurate payroll record showing the name, address, social security number, work classification and straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker or other employee employed by him or her in connection with the Project.

b. All payroll records shall be certified and submitted to the District with each application for payment, but shall not be submitted less than once per month. All payroll records shall be available for inspection at all reasonable hours at the principal office of the Contractor on the following basis:

1. A certified copy of an employee's payroll record shall be made available for inspection or furnished to the employee or his or her authorized representative on request.

2. A certified copy of all payroll records shall be made available for inspection or furnished upon request to a representative of District, the Division of Labor Standards Enforcement or the Division of Apprenticeship Standards of the Department of Industrial Relations.

3. A certified copy of all payroll records shall be made available upon request by the public for inspection or for copies thereof. However, a request by the public shall be made through the District, the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement. If the requested payroll records have not been provided pursuant to Paragraph (2) above, the requesting party shall, prior to being provided the records, reimburse the costs, according to law for the preparation by the Contractor, Subcontractor(s), and the entity through which the request was made. The public shall not be given access to such records at the principal office of the Contractor.

c. The certified payroll records shall be on forms provided by the Division of Labor Standards Enforcement or shall contain the same information as the forms provided by the Division of Labor Standards Enforcement.

d. The Contractor or Subcontractor(s) shall file a certified copy of all payroll records with the entity that requested such records within 10 calendar days after receipt of a written request.

e. Any copy of records made available for inspection as copies and furnished upon request to the public or any public agency by the District, the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement shall

be marked or obliterated to prevent disclosure of an individual's name, address and social security number. The name and address of the Contractor awarded the Contract or the Subcontractor(s) performing the Contract shall not be marked or obliterated. Any copy of records made available for inspection by, or furnished to, a joint labor-management committee established pursuant to the federal Labor Management Cooperation Act of 1978 (Section 175a of Title 29 of the United States Code) shall be marked or obliterated only to prevent disclosure of an individual's name and social security number. Notwithstanding any other provision of law, agencies that are included in the Joint Enforcement Strike Force on the Underground Economy established pursuant to Section 329 of the Unemployment Insurance Code and other law enforcement agencies investigating violations of law shall, upon request, be provided non-redacted copies of certified payroll records.

f. The Contractor shall inform the District of the location of all payroll records, including the street address, city and county, and shall, within five working days, provide a notice of a change of location and address.

g. The Contractor or Subcontractor(s) shall have 10 calendar days in which to comply subsequent to receipt of a written notice requesting payroll records. In the event that the Contractor or Subcontractor(s) fails to comply within the 10-day period, the Contractor or Subcontractor(s) shall, as a penalty to the District, forfeit One Hundred Dollars ($100.00) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, these penalties shall be withheld from progress payments then due.

Responsibility for compliance with this Article shall rest upon the Contractor.

13.8.2 Withholding of Contract Payments & Penalties

The District may withhold or delay contract payments to the Contractor and/or any Subcontractor if:

a. The required prevailing rate of per diem wages determined by the Director of the Department of Industrial Relations is not paid to all workers employed on the Project; or

b. The Contractor or Subcontractor(s) fail to submit all required certified payroll records with each application for payment, but not less than once per month; or

c. The Contractor or Subcontractor(s) submit incomplete or inadequate payroll records; or

d. The Contractor or Subcontractor(s) fail to comply with the Labor Code requirements concerning apprentices; or

e. The Contractor or Subcontractor(s) fail to comply with any applicable state laws governing workers on public works projects.

13.9 APPRENTICES

13.9.1 Apprentice Wages and Definitions

All apprentices employed by the Contractor to perform services under the Contract shall be paid the standard wage paid to apprentices under the regulations of the craft or trade for which he or she is employed, and as determined by the Director of the Department of Industrial Relations, and shall be employed only at the craft or trade to which he or she is registered. Only apprentices, as defined in §3077 of the Labor Code, who are in training under apprenticeship standards that have been approved by the Chief of the Division of Apprenticeship Standards and who are parties to written apprenticeship agreements under Chapter 4 (commencing with §3070) of Division 3, are eligible to be employed under this Contract. The employment and training of each apprentice shall be in accordance with the apprenticeship standards and apprentice agreements under which he or she is training, or in accordance with the rules and regulations of the California Apprenticeship Council.

13.9.2 Employment of Apprentices

Contractor agrees to comply with the requirements of Labor Code §1777.5. The Contractor awarded the Project, or any Subcontractor under him or her, when performing any of the Work under the Contract or subcontract, employs workers in any apprenticeable craft or trade, the Contractor and Subcontractor shall employ apprentices in the ratio set forth in Labor Code §1777.5. The Contractor or any Subcontractor must apply to any apprenticeship program in the craft or trade that can provide apprentices to the Project site for a certificate approving the contractor or subcontractor under the apprenticeship standards for the employment and training of apprentices in the area or industry affected. However, the decision of the apprenticeship program to approve or deny a certificate shall be subject to review by the Administrator of Apprenticeship. The apprenticeship program or programs, upon approving the Contractor or Subcontractor, shall arrange for the dispatch of apprentices to the Contractor or Subcontractor upon the Contractor's or Subcontractor's request. "Apprenticeable craft or trade" as used in this Article means a craft or trade determined as an apprenticeable occupation in accordance with the rules and regulations prescribed by the California Apprenticeship Council. The ratio of work performed by apprentices to journeyman employed in a particular craft or trade on the Project shall be in accordance with Labor Code §1777.5.

13.9.3 Submission of Contract Information

Prior to commencing Work on the Project, the Contractor and Subcontractors shall submit contract award information to the applicable apprenticeship program(s) that can supply apprentices to the Project and make the request for the dispatch of apprentices in accordance with the Labor Code. The information submitted shall include an estimate of journeyman hours to be performed under the Contact, the number of apprentices proposed to be employed, and the approximate dates the apprentices would be employed. A copy of this information shall also be submitted to the District if requested. Within 60 days after concluding Work on the Project, the Contractor and Subcontractors shall submit to the District, if requested, and to the apprenticeship program a verified statement of the journeyman and apprentice hours performed on the Project.

13.9.4 Apprentice Fund

The Contractor or any Subcontractor under him or her, who, in performing any of the Work under the Contract, employs journeymen or apprentices in any apprenticeable craft or trade shall contribute to the California Apprenticeship Council the same amount that the Director determines is the prevailing amount of apprenticeship training contributions in the area of the Project. The Contractor and

Subcontractors may take as a credit for payments to the California Apprenticeship Council any amounts paid by the Contractor or Subcontractor to an approved apprenticeship program that can supply apprentices to the Project. The Contractor and Subcontractors may add the amount of the contributions in computing his or her bid for the Contract.

13.9.5 Prime Contractor Compliance

The responsibility of compliance with Article 13 and §1777.5 of the Labor Code for all apprenticeable occupations is with the Prime Contractor. Any Contractor or Subcontractor that knowingly violates the provisions of this Article or Labor Code §1777.5 shall be subject to the penalties set forth in Labor Code §1777.7.

13.10 ASSIGNMENT OF ANTITRUST CLAIMS

13.10.1 Application

Pursuant to Government Code § 4551, in entering into a public works contract or a subcontract to supply goods, services, or materials pursuant to a public works contract, the Contractor or Subcontractor offers and agrees to assign to the District all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act, (15 U.S.C. § 15) or under the Cartwright Act (Chapter 2 [commencing with § 16700] of Part 2 of Division 7 of the Business and Professions Code), arising from the purchase of goods, services, or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders Retention Payment to the Contractor, without further acknowledgment by the parties. If the District receives, either through judgment or settlement, a monetary recovery for a cause of action assigned under Chapter 11 (commencing with § 4550) of Division 5 of Title 1 of the Government Code, the assignor shall be entitled to receive reimbursement for actual legal costs incurred and may, upon demand, recover from the District any portion of the recovery, including treble damages, attributable to overcharges that were paid by the assignor but were not paid by the District as part of the bid price, less the expenses incurred in obtaining that portion of the recovery.

13.10.2 Assignment of Claim

Upon demand in writing by the assignor, the District shall, within one (1) year from such demand, reassign the cause of action assigned pursuant to this Article if the assignor has been or may have been injured by the violation of law for which the cause of action arose and the District has not been injured thereby or the District declines to file a court action for the cause of action.

13.11 STATE AND DISTRICT CONDUCTED AUDITS

Pursuant to and in accordance with the provisions of Government Code § 10532, or any amendments thereto, all books, records, and files of the District, the Contractor, or any Subcontractor connected with the performance of this Contract involving the expenditure of state funds in excess of Ten Thousand Dollars ($10,000.00), including, but not limited to, the administration thereof, shall be subject to the examination and audit of the Office of the Auditor General of the State of California for a period of five (5) years after Retention Payment is made or a Notice of Completion is Recorded, whichever occurs first. Contractor shall preserve and cause to be preserved such books, records, hard drives, electronic media, and files for the audit period.

Pursuant to the remedies under Public Contract Code section 9201 and Government Code section 930.2, Contractor, through execution of this Agreement, also agrees the District shall have the right

to review and audit, upon reasonable notice, the books and records of the Contractor concerning any monies associated with the Project. The purpose of this "Audit" is to quickly and efficiently resolve Disputes based on the actual costs incurred and to reduce the uncertainty in resolving Disputes with limited information. The District shall perform any audits at its own cost and any such audit shall be performed by an independent auditor, having no direct or indirect relationship with the functions or activities being audited or with the business conducted by the Contractor or District. In the event the independent auditor determines that Change Orders, response to Request for Proposals, Claims, Appeal of Claims, or other requests for payment are in error, or have has any other concerns or questions, the Auditor shall report the results of the Audit findings to the District and provide a copy to the Contractor after giving the District Board the opportunity for at least 10 days review. If the Contractor disputes the findings of the independent auditor, such dispute shall be handled in the manner set forth under Article 4.6.2 entitled Disputes.

If Contractor having agreed to the terms of this Contract fails to produce books or records requested by Auditor, such failure to produce books or records that were required to be preserved for audit, it shall be presumed that the information contained in the withheld books or records were unfavorable to the Contractor and the Auditor shall note this refusal in the results of the Audit findings for further evaluation by the District and the District's Board. The refusal to release records that are concerning monies associated with the Project may be used as a grounds to debar the Contractor under Article 15 for failure to preserve records under Article 13.11 and the failure to produce required audit records may also be used as a grounds for a negative finding against the Contractor depending on the significance of the records that are withheld by Contractor. Failure to produce job cost data tied to job cost categories and budgets shall be presumed an intentional failure to produce key audit records. Similarly, failure to produce Daily Reports (prepared at or near the time of the Work actually took place (See Article 3.16) shall be presumed an intentional failure to produce key audited records.

If Contractor is seeking costs for inefficiency, home office overhead, or unanticipated increased costs due to delays or acceleration, Contractor shall also produce copies of the original bid tabulation utilized in submitting Contractor's bid for the Project. This document shall be considered confidential and shall not be subject to disclosure through a Public Records Act and shall not be distributed to anyone other than the District and the District's counsel. This bid tabulation shall only be used in litigation, arbitration, evaluation of Claims or Disputes, Audit, and trial. If the records for the bid tabulation are kept on a computer, the Contractor shall also produce all metadata (in native format) that accompanies the bid tabulation for inspection to prove the authenticity of the underlying bid tabulation. Failure to produce the bid tabulation for review of inefficiency, home office overhead, or unanticipated increased costs due to delays or accelerations shall be considered material evidence that the bid tabulation was not favorable to the Contractor. This evidence shall be entered as a jury instruction for trial that the bid tabulation was not produced and the bid tabulation information was unfavorable to the Contractor. The evidence may also be used in debarment proceedings, and noted as an exception to an Audit findings.

Upon notification of Contractor concerning the results of the audit and a reasonable time has passed for Contractor to respond to the Audit findings and if either there is no Dispute of the Audit findings under Article 4.6 or if the result after utilizing the Disputes Clause confirms the Audit findings, the District may seek reimbursement for overstated Claims, Change Orders, or Appeal of Claims and may also undertake debarment proceedings under Article 15 of these General Conditions.

13.12 STORM WATER POLLUTION PREVENTION

13.12.1 Application

This Section addresses the preparation, implementation and monitoring of a Storm Water Pollution Prevention Plan (SWPPP) for the purpose of preventing the discharge of pollutants from the

construction site. This includes the elimination of pollution discharges such as improper dumping, spills or leakage from storage tanks or transfer areas. The District will not issue a Notice to Proceed until Contractor has prepared by a qualified individual and obtained approval of the Permit Registration Documents ("PRDs") that include a Notice of Intent, Construction Risk Calculation, Site Map, SWPPP, Annual Fee and any additional required documents from all applicable Local Governing Agencies including the Regional Water Quality Control Board. The Contractor shall also secure a certification that the Project has met all of the conditions of the General Construction Activity Storm Water Permit (GCASP) and comply with all applicable local, state and federal regulations governing storm water pollution prevention.

13.12.2 References and Materials

- California Stormwater Quality Association New Development and Redevelopment Best Management Practice Handbook

- 2009 California Stormwater Quality Association Construction BMP Handbook .

- State Water Resources Control Board (2009). Order 2009-0009-DWQ, NPDES General Permit No. CAS000002: Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbing Activities. Available on-line at:

- http://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.shtml.- Use materials of a class, grade and type needed to meet the performance described in the BMP Handbook.

13.12.3 Preparation and Approval

The Contractor shall prepare by a qualified individual the PRDs that include a Notice of Intent, Construction Risk Calculation, Site Map, SWPPP, Annual Fee and any additional required documents. The Contractor's Qualified SWPPP Developer ("QSD") shall prepare the Storm Water Pollution Prevention Plan (SWPPP) as required to comply with storm water pollution regulations for project sites with storm water discharges associated with construction activity such as clearing or demolition, grading, excavation and other land disturbances. The SWPPP shall apply to all areas that are directly related to construction activity, including but not limited to staging areas, storage yards, material borrow areas, and access roads.

13.12.3.1 The Contractor shall prepare and submit to the Local Governing Agencies and the District the SWPPP for review and approval if the project sites, new or existing, with land disturbance of 1 or more acres (or less than 1 acres if part of a common plan of development); the construction activity that results in land surface disturbances of less than one acre is part of a larger common plan of development or sale of one or more acres of disturbed land surface; or the construction activity associated with Linear Underground/Overhead Projects ("LUPs") including, but not limited to, those activities necessary for the installation of underground and overhead linear facilities (e.g., conduits, substructures, pipelines, towers, poles, cables, wires, connectors, switching, regulating and transforming equipment and associated ancillary facilities) and include, but are not limited to, underground utility mark-out, potholing, concrete and asphalt cutting and removal, trenching, excavation, boring and drilling, access road and pole/tower pad and cable/wire pull station, substation construction, substructure installation, construction of tower footings and/or foundations, pole and tower installations, pipeline installations, welding, concrete and/or pavement repair or replacement, and stockpile/borrow locations.

13.12.3.2 The Contractor shall also pay annual renewal fee(s) until the contract is completed and make all such checks payable to the State Water Resources Control Board. The Notice of Intent must be submitted at least two weeks prior to the commencement of construction activities.

13.12.3.3 The Contractor shall prepare the SWPPP by following the format in Sections 2, 3, 4 and Appendices A through F of the California Stormwater BMP Handbook - Construction, January 2009 edition, published by the California Stormwater Quality Association. The publication is available from:

California Stormwater
Quality Association
P.O. Box 2105
Menlo Park, CA 94026-2105
Phone: (650) 366-1042
E-mail: info@casqa.org

or

https://www.casqa.org/store/products/tabid/154/p-167-construction-handbookportal-initial-subscription.aspx

13.12.3.4 Where land disturbance is less than 1 acre, any BMPs indicated in the BMP Handbook needed to prevent or minimize storm water pollution shall be implemented at no extra cost to the District.

13.12.3.5 Within two weeks after Award of Contract by the District, the Contractor shall submit to the District's Civil Engineer one copy of the PRDs including the SWPPP for review. After the District's approval, the Contractor shall provide approved copies of the SWPPP as follows: one copy each to the District's Construction Inspector, District's Construction Manager, District Architect, Commissioned Architect and District's Civil Engineer.

13.12.4 Implementation

The Contractor shall implement the Storm Water Pollution Prevention Plan by doing the following:

a. Obtain a Waste Discharger Identification (WDID) number from the SWRCB before beginning construction. This number will be issued once your PRDs are administratively accepted and fee is received.

b. Keep the SWPPP, REAPs, monitoring data on the construction site.

c. Employ a Qualified SWPPP Practitioner (QSP) to implement the SWPPP during construction and develop Rain Event Action Plans ("REAPs").

d. Install, inspect, maintain and monitor BMPs required by the General Permit.

e. Install perimeter controls prior to starting other construction work at the site.

f. Contain on-site storm water at the jobsite. Do not drain on-site water directly into the storm drain.

g. Implement the SWPPP.

h. Provide SWPPP and BMP implementation training for those responsible for implementing the SWPPP.

i. Designate trained personnel for the proper implementation of the SWPPP.

j. Conduct monitoring, as required, and assess compliance with the Numeric Action Levels (NALs) or Numeric Effluent Limitations (NELs) appropriate to your project.

k. Report monitoring data:

1. Maintain a paper or electronic copy of all required records for three years from the date generated or date submitted, whichever is last. These records must be available at the construction site until construction is completed.

2. Have a QSD revise the SWPPP as needed to reflect the phases of construction and to suit changing site conditions and instances when properly installed systems are ineffective.

3. Assist the District with entering any necessary data or information into the Stormwater Multi-Application and Reporting System ("SMARTS") system.

l. At the end of Construction Contract:

1. Submit Notice of Termination (NOT) into the SMARTS when construction is complete and conditions of termination listed in the NOT have been satisfied. A copy of the NOT can be found at: http://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.shtml.

2. Leave in place storm water pollution prevention controls needed for post-construction storm water management and remove those that are not needed as determined by the District. Thereafter, left-in-place controls will be maintained by the District.

3. Provide Site Monitoring Reports, SWPPP revisions, Compliance Certifications and related documents to the District. Post-construction storm water operation and management plan as mentioned in the compliance certifications are considered to be in place at the end of the Construction Contract.

13.12.5 Monitoring

The Contractor shall conduct examination of storm water pollution prevention controls as required by the State Water Resources Control Board (2009). Order 2009-0009-DWQ, NPDES General Permit No. CAS000002: Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbing Activities. This includes properly qualified personnel performing all required monitoring, testing, inspections and monitoring. The Contractor shall also conduct examination

of storm water pollution prevention controls, as well as before and after each storm event in compliance with the State Water Resources Control Board Order No. 2009-0009-DWQ, National Pollutant Discharge Elimination System General Permit No. CAS000002, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities (General Permit) (SWRCB, 2009).and at least once each 24-hour period during extended storm events to identify BMP effectiveness and implement repairs or BMP changes as soon as feasible. All maintenance related to a storm event should be completed within 48 hours of the storm event. The Contactor shall also prepare and maintain, at the jobsite, a log of each inspection using Site Monitoring Report forms.

13.12.6 Liabilities and Penalties

a. Review of the SWPPP and inspection logs by the District shall not relieve the Contractor from liabilities arising from non-compliance with storm water pollution regulations.

b. Payment of penalties for non-compliance by the Contractor shall be the sole responsibility of the Contractor and will not be reimbursed by the District.

c. Compliance with the Clean Water Act pertaining to construction activity is the sole responsibility of the Contractor. For any fine(s) levied against the District due to non-compliance by the Contractor, the District will deduct from the final payment due the Contractor the total amount of the fine(s) levied on the District, plus legal and associated costs.

d. The Contractor shall submit to the District a completed NOI for change of information (Construction Site Information and Material Handling/Management Practices).

ARTICLE 14
TERMINATION OR SUSPENSION OF THE CONTRACT

14.1 TERMINATION BY THE CONTRACTOR FOR CAUSE

14.1.1 Grounds for Termination

The Contractor may terminate the Contract if the Work is stopped for a period of thirty (30) consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons performing portions of the Work for whom the Contractor is contractually responsible, for only the following reasons:

a. Issuance of an order of a court or other public authority having jurisdiction; or

b. An act of the United State or California government, such as a declaration of national emergency.

14.1.2 Notice of Termination

If one of the above reasons exists, the Contractor may, upon written notice of seven (7) additional days to the District, terminate the Contract and recover from the District payment for Work executed and for reasonable costs verified by the Architect with respect to materials, equipment, tools, construction equipment, and machinery, including reasonable overhead, profit, and damages.

14.2 TERMINATION BY THE DISTRICT FOR CAUSE

14.2.1 Grounds for Termination

The District may terminate the Contractor and/or this Contract for the following reasons:

a. Persistently or repeatedly refuses or fails to supply enough properly skilled workers or proper materials;

b. Persistently or repeatedly is absent, without excuse, from the job site;

c. Fails to make payment to Subcontractors, suppliers, materialmen, etc.;

d. Persistently disregards laws, ordinances, rules, regulations, or orders of a public authority having jurisdiction;

e. Fails to provide a schedule or fails or refuses to update schedules required under the Contract;

f. Falls behind on the Project and refuses or fails to undertake a Recovery Schedule;

g. If the Contractor has been debarred from performing Work

h. Becomes bankrupt or insolvent, including the filing of a general assignment for the benefit of creditors; or

i. Otherwise is in substantial breach of a provision of the Contract Documents.

14.2.2 Notification of Termination

When any of the above reasons exist, the District may, without prejudice to any other rights or remedies of the District and after giving the Contractor and the Contractor's Surety written notice of seven (7) days, terminate the Contractor and/or this Contract and may, subject to any prior rights of the Surety:

a. Take possession of the Project and of all material, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;

b. Accept assignment of Subcontracts. Contractor acknowledges and agrees that if the District (in its sole and absolute discretion) decides to takeover completion of the Project, the Contractor agrees to immediately assign all subcontracts to the District which the District has chosen to accept;

c. Complete the Work by any reasonable method the District may deem expedient, including contracting with a replacement contractor or contractors; and,

d. Agree to accept a takeover and completion arrangement with Surety that is acceptable to the District Board.

14.2.3 Takeover and Completion of Work after Termination for Cause

A Termination for Cause is an urgent matter which requires immediate radiation since Project Work is open and incomplete, the site is subject to vandalism and theft, the Project site is considered a public nuisance, and there is a possibility of injury and deterioration of the Project Work and materials. Thus, the District shall be entitled to enter a takeover contract to either remediate the unfinished condition or complete the Work for this Project.

14.2.4 Payments Withheld

If the District terminates the Contract for one of the reasons stated in Article 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is complete. All costs associated with the termination and completion of the Project shall be the responsibility of the Contractor and/or its Surety.

14.2.5 Payments upon Completion

If the unpaid balance of the Contract Sum exceeds costs of completing the Work, including compensation for professional services and expenses made necessary thereby, such excess shall be paid to the Contractor. If such costs exceed the unpaid balance, the Contractor and its Surety shall pay the difference to the District. The amount to be paid to the Contractor, or District, as the case may be, shall be certified by the Architect upon application. This payment obligation shall survive completion of the Contract.

14.3 TERMINATION OF CONTRACT BY DISTRICT (CONTRACTOR NOT AT FAULT)

14.3.1 Termination for Convenience

District may terminate the Contract upon fifteen (15) calendar days of written notice to the Contractor and use any reasonable method the District deems expedient to complete the Project, including

contracting with replacement contractor or contractors, if it is found that reasons beyond the control of either the District or Contractor make it impossible or against the District's interest to complete the Project. In such a case, the Contractor shall have no Claims against the District except for: (1) the actual cost for approved labor, materials, and services performed in accordance with the Contract Documents which have not otherwise been previously paid for and which are supported and documented through timesheets, invoices, receipts, or otherwise; and (2) profit and overhead of ten percent (10%) of the approved costs in item (1); and (3) termination cost of five percent (5%) of the approved costs in item (1). Contractor acknowledges and agrees that if the District (in its sole and absolute discretion) decides to takeover completion of the Project, the Contractor agrees to immediately assign all subcontracts to the District which the District has chosen to accept.

14.3.2 Non-Appropriation of Funds/ Insufficient Funds

In the event that sufficient funds are not appropriated to complete the Project or the District determines that sufficient funds are not available to complete the Project, District may terminate or suspend the completion of the Project at any time by giving written notice to the Contractor. In the event that the District exercises this option, the District shall pay for any and all work and materials completed or delivered onto the site for which value is received, and the value of any and all work then in progress and orders actually placed which cannot be canceled up to the date of notice of termination. The value of work and materials not otherwise already paid for by the District up to the time of termination under this Paragraph shall include a factor of fifteen percent (15%) for the Contractor's overhead and profit and there shall be no other costs or expenses paid to Contractor. All work, materials and orders paid for pursuant to this provision shall become the property of the District. District may, without cause, order Contractor in writing to suspend, delay or interrupt the Project in whole or in part for such period of time as District may determine. Adjustment shall be made for increases in the cost of performance of the Agreement caused by suspense, delay or interruption.

14.4 REMEDIES OTHER THAN TERMINATION

If a default occurs, the District may, without prejudice to any other right or remedy, including, without limitation, its right to terminate the Contract pursuant to Article 14.2, do any of the following:

a. Permit the Contractor to continue under this Contract, but make good such deficiencies or complete the Contract by whatever method the District may deem expedient, and the cost and expense thereof shall be deducted from the Contract Price or paid by the Contractor to the District on demand;

b. If the workmanship performed by the Contractor is faulty or defective materials are provided, erected or installed, then the District may order the Contractor to remove the faulty workmanship or defective materials and to replace the same with work or materials that conform to the Contract Documents, in which event the Contractor, at its sole costs and expense, shall proceed in accordance with the District's order and complete the same within the time period given by the District in its notice to the Contractor; or

c. Initiate procedures to declare the Contractor a non-responsible bidder for a period of two (2) to five (5) years thereafter.

All amounts expended by the District in connection with the exercise of its rights hereunder shall accrue interest from the date expended until paid to the District at the maximum legal rate. The District may retain or withhold any such amounts from the Contract Price. If the Contractor is ordered to replace any faulty workmanship or defective materials pursuant to Paragraph (b) above, the Contractor shall replace

the same with new work or materials approved by the Architect and the District, and, at its own cost, shall repair or replace, in a manner and to the extent the Architect and the District shall direct, all Work or material that is damaged, injured or destroyed by the removal of said faulty workmanship or defective material, or by the replacement of the same with acceptable work or materials. In no event shall anything in this Article be deemed to constitute a waiver by the District of any other rights or remedies that it may have at law or in equity, it being acknowledged and agreed by the Contractor that the remedies set forth in this Article are in addition to, and not in lieu of, any other rights or remedies that the District may have at law or in equity.

ARTICLE 15
DEBARMENT

15.1 DEBARMENT MEANS THERE HAS BEEN A FINDING THAT THE CONTRACTOR IS NOT RESPONSIBLE.

During the course of the Project, or if it is determined through Change Orders, Claims, or Audit that a Contractor is not responsible, the District may, in addition to other remedies provided in the Contract, debar the Contractor from bidding or proposing on, or being awarded, and/or performing work on District contracts for a specified period of time, which generally will not exceed five (5) years, but may exceed five (5) years or be permanent if the circumstances warrant such debarment. In addition to the debarment proceeding, a finding that a Contractor is to be debarred shall result in the termination of any or all existing Contracts the Contractor may have with the District.

15.2 BOARD FINDING

The District may debar a Contractor if the Board, or the Board's delagatee, in its discretion, finds the Contractor has done any of the following:

15.2.1 Intentionally or with reckless disregard, violated any term of the Contract with the District

15.2.2 Committed an acts or omission which reflects on the Contractor's quality, fitness or capacity to perform Work for the District;

15.2.3 Committed an act or offense which indicates a lack of business integrity or business honesty; or,

15.2.4 Made or submitted a false claim against the District or any other public entity.

15.3 HEARING AND PRESENTATION OF EVIDENCE

If there is evidence that the Contractor may be subject to debarment, the District shall notify the Contractor in writing of the evidence which is the basis for the proposed debarment and shall advice the Contractor of the scheduled date for a debarment hearing before the District Board or its delegated designee.

The District Board, or designee, shall conduct a hearing where evidence on the proposed debarment is presented. The Contractor or the Contractor's representative shall be given an opportunity to submit evidence at the hearing. The Contractor shall be provided an adequate amount of time to prepare and object to evidence presented. A tentative proposed decision shall be issued as a tentative decision and the District shall be entitled to modify, deny or adopt the proposed decision. The proposed decision shall contain a recommendation regarding whether the Contractor should be debarred, and, if so, the appropriate length of time of the debarment. The Contractor and the District shall be provided an opportunity to object to the tentative proposed decision for a period of 15 days. If additional evidence is presented, the District shall evaluate this evidence and either issue an amended ruling, issue the same ruling, or call a further hearing.

If a Contractor has been debarred for a period of longer than five (5) years, that Contractor may after the debarment has been in effect for at least five (5) years, submit a written request for review of the debarment determination to reduce the period of debarment or terminate the debarment. The District may, in its discretion, reduce the period of debarment or terminate the debarment if it finds that the Contractor has adequately demonstrated one or more of the following: (1) elimination of the grounds for which the debarment was imposed; (2) a bona fide change in ownership or management; (3) material evidence discovered after debarment was imposed; or (4) any other reason that is in the best interests of the District.

The District will consider a request for review of a debarment determination only where: (1) the Contractor has been debarred for a period longer than five (5) years; (2) the debarment has been in effect for at least five (5) years; and (3) the request is in writing, states one or more of the grounds for reduction of the debarment period or termination of the debarment, and includes supporting documentation. Upon receiving an appropriate request, the District will provide notice of the hearing on the request. At the hearing, the District shall review evidence on the proposed reduction of debarment period. This hearing shall be conducted and the request for review decided by the District pursuant to the same procedures as for a debarment hearing.

The District's proposed decision shall contain a recommendation on the request to reduce the period of debarment or terminate the debarment.

The terms shall also apply to Subcontractors of Contractor.

END OF GENERAL CONDITIONS

CONDITIONAL WAIVER AND RELEASE UPON PROGRESS PAYMENT

(Civil Code Section 8132)

NOTICE: THIS DOCUMENT WAIVES THE CLAIMANT'S LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE ON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT HAS RECEIVED PAYMENT.

Identifying Information:

Name of Claimant: _____

Name of Customer: _____

Job Location: _____

Owner: _____

Through Date: _____

Conditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and services provided, and equipment and material delivered, to the customer on this job through the Through Date of this document. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. This document is effective only on the claimant's receipt of payment from the financial institution on which the following check is drawn:

Maker of Check: _____

Amount of Check: $ _____

Check Payable to: _____

Exceptions

This document does not affect any of the following:

(1) Retentions.
(2) Extras for which the claimant has not received payment.
(3) The following progress payments for which the claimant has previously given a conditional waiver and release but has not received payment:

Date(s) of waiver and release: _____

Amount(s) of unpaid progress payment(s): $ _____

(4) Contract rights, including (A) a right based on rescission, abandonment, or breach of contract, and (B) the right to recover compensation for work not compensated by the payment.

Signature

Claimant's Signature _____

Claimant's Title _____

Date of Signature _____

DECLARATION TO PROCURE PAYMENT AND RELEASE OF CONTRACT RIGHTS

(Name of Releasing Company As It Appears On The Release)	
(Project)	**(Date As It Appears On The Release)**

The company named above has executed a Conditional Waiver and Release Upon Progress Payment, pursuant to Civil Code Section 8132 through the date shown above. The statutory form of release provides that it does not release extras furnished before the Through Date for which payment has not been received or the right to recover compensation for furnished labor, services, equipment, or material that was not compensated by progress payment. The statutory release also provides that it does not cover contract rights, including rights based on rescission, abandonment or breach of contract.

In order to induce payment of the amount shown in the statutory release, the undersigned individual hereby declares that the company named above did not furnish any extras or any labor, services, equipment or material before the Through Date that were not compensated by the progress payment, except for the items listed below.

By execution of this document, the company also hereby releases all contract rights and claims that it has with regard to labor, service, equipment or material furnished through the Through Date, including rights and claims based on rescission, abandonment or breach of contract.

This Declaration and Release of Contract Rights is conditional, and shall be effective only when the check described on the statutory Conditional Waiver and Release form that accompanies this document has been properly endorsed and paid by the bank upon which it is drawn.

EXCEPTIONS
(Record Any Exceptions In This Space. If No Exceptions, Write "None")

I declare under penalty of perjury that the foregoing is true and correct. Signed at

_____, California, on _____, **2024**
(City) **(Date of Signature)**

_____
(Signature)

_____
(Print Name)

_____
(Title)

NOTE: This form is designed to accompany a statutory CONDITIONAL WAIVER AND RELEASE UPON PROGRESS PAYMENT.

CONDITIONAL WAIVER AND RELEASE UPON FINAL PAYMENT

(Civil Code Section 8136)

NOTICE: THIS DOCUMENT WAIVES THE CLAIMANT'S LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE ON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT HAS RECEIVED PAYMENT.

Identifying Information:

Name of Claimant: _____

Name of Customer: _____

Job Location: _____

Owner: _____

Conditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. This document is effective only on the claimant's receipt of payment from the financial institution on which the following check is drawn:

Maker of Check: _____

Amount of Check: $ _____

Check Payable to: _____

Exceptions

This document does not affect any of the following:

Disputed claims for extras in the amount of: $ _____

Signature

Claimant's Signature: _____

Claimant's Title: _____

Date of Signature: _____

DECLARATION TO PROCURE PAYMENT AND RELEASE OF CONTRACT RIGHTS

(Name of Releasing Company As It Appears On The Release)	
(Project)	(Date As It Appears On The Release)

The company named above has executed a Conditional Waiver and Release Upon Final Payment, pursuant to Civil Code Section 8136 on the date shown above.

In order to induce payment of the amount shown in the statutory release, the undersigned individual hereby declares that the company named above did not furnish any extras or any labor, services, equipment or material on the Project that was not compensated by the final payment, except for the items listed below.

By execution of this document, the company also hereby releases all contract rights and claims that it has with regard to labor, service, equipment or material furnished on the Project, including rights and claims based on rescission, abandonment or breach of contract.

This Declaration and Release of Contract Rights is conditional, and shall be effective only when the check described on the statutory Conditional Waiver and Release form that accompanies this document has been properly endorsed and paid by the bank upon which is it drawn.

EXCEPTIONS
(Record Any Exceptions In This Space. If No Exceptions, Write "None")

I declare under penalty of perjury that the foregoing is true and correct. Signed at

_____, California, on _____, 2024
(City) **(Date of Signature)**

_____
(Signature)

_____
(Print Name)

_____
(Title)

NOTE: This form is designed to accompany a statutory CONDITIONAL WAIVER AND RELEASE UPON FINAL PAYMENT.

UNCONDITIONAL WAIVER AND RELEASE UPON PROGRESS PAYMENT

(Civil Code Section 8134)

NOTICE TO CLAIMANT: THIS DOCUMENT WAIVES AND RELEASES LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. THIS DOCUMENT IS ENFORCEABLE AGAINST YOU IF YOU SIGN IT, EVEN IF YOU HAVE NOT BEEN PAID. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL WAIVER AND RELEASE FORM.

Identifying Information

Name of Claimant: _____

Name of Customer: _____

Job Location: _____

Owner: _____

Through Date: _____

Unconditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job through the Through Date of this document. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. The claimant has received the following progress payment:

$ _____

Exceptions

This document does not affect any of the following:

(1) Retentions.
(2) Extras for which the claimant has not received payment.
(3) Contract rights, including:

(A) a right based on rescission, abandonment, or breach of contract, and
(B) the right to recover compensation for work not compensated by the payment.

Signature

Claimant's Signature: _____

Claimant's Title: _____

Date of Signature: _____

GENERAL CONDITIONS

DECLARATION TO PROCURE PAYMENT AND RELEASE OF CONTRACT RIGHTS

(Name of Releasing Company As It Appears On The Release)	
(Project)	(Date As It Appears On The Release)

The company named above has executed an Unconditional Waiver and Release Upon Progress Payment, pursuant to Civil Code Section 8134 through the date shown above. The statutory form of release provides that it does not release extras furnished before the Through Date for which payment has not been received or the right to recover compensation for furnished labor, services, equipment, or material that was not compensated by progress payment. The statutory release also provides that it does not cover contract rights, including rights based on rescission, abandonment or breach of contract.

In acknowledging receipt of the payment of the amount shown in the statutory release, the undersigned individual hereby declares that the company named above did not furnish any extras or any labor, services, equipment or material before the Through Date that was not compensated by the progress payment, except for the items listed below.

By execution of this document, the company also hereby releases all contract rights and claims that it has with regard to labor, service, equipment or material furnished through the Through Date, including rights and claims based on rescission, abandonment or breach of contract.

EXCEPTIONS
(Record Any Exceptions In This Space. If No Exceptions, Write "None")

I declare under penalty of perjury that the foregoing is true and correct. Signed at

_____, California, on _____, 2024
(City) **(Date of Signature)**

_____
(Signature)

_____
(Print Name)

_____
(Title)

NOTE: This form is designed to accompany a statutory UNCONDITIONAL WAIVER AND RELEASE UPON PROGRESS PAYMENT.

UNCONDITIONAL WAIVER AND RELEASE UPON FINAL PAYMENT

(Civil Code Section 8138)

NOTICE TO CLAIMANT: THIS DOCUMENT WAIVES AND RELEASES LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. THIS DOCUMENT IS ENFORCEABLE AGAINST YOU IF YOU SIGN IT, EVEN IF YOU HAVE NOT BEEN PAID. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL WAIVER AND RELEASE FORM.

Identifying Information

Name of Claimant: _____

Name of Customer: _____

Job Location: _____

Owner: _____

Unconditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for all labor and service provided, and equipment and material delivered, to the customer on this job. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. The claimant has been paid in full.

Exceptions

This document does not affect any of the following:

Disputed claims for extras in the amount of: $ _____

Signature

Claimant's Signature: _____

Claimant's Title: _____

Date of Signature: _____

DECLARATION TO PROCURE PAYMENT AND RELEASE OF CONTRACT RIGHTS

(Name of Releasing Company As It Appears On The Release)	
(Project)	(Date As It Appears On The Release)

The company named above has executed An Unconditional Waiver and Release Upon Final Payment, pursuant to Civil Code Section 8138 on the date shown above.

The undersigned individual hereby declares that the company named above did not furnish any extras or any labor, services, equipment or material on the Project that was not compensated by the final payment, except for the items listed below.

By execution of this document, the company also hereby releases all contract rights and claims that it has with regard to labor, service, equipment or material furnished on the Project, including rights and claims based on rescission, abandonment or breach of contract.

EXCEPTIONS
(Record Any Exceptions In This Space. If No Exceptions, Write "None")

I declare under penalty of perjury that the foregoing is true and correct. Signed at

_____, California, on _____, 2024
(City) **(Date of Signature)**

_____
(Signature)

_____
(Print Name)

_____
(Title)

NOTE: This form is designed to accompany a statutory UNCONDITIONAL WAIVER AND RELEASE UPON FINAL PAYMENT.

VERIFICATION OF CERTIFIED PAYROLL RECORDS SUBMITTAL TO LABOR COMMISSIONER

I am the _____ for _____ in
(Superintendent/Project Manager) (Contractor)
connection with _____ Project.

This Verification is submitted to Ventura Unified School District concurrently with the Contractor's submittal of an Application for Progress Payment to the District, identified as Application For Progress Payment No. _____ ("the Pay Application").

1. The Pay Application requests the District's disbursement of a Progress Payment for the value of Work performed between _____, 20___ and _____, 20___.
2. The Contractor has submitted Certified Payroll Records ("CPR") to the Labor Commissioner for all employees of the Contractor engaged in performance of Work subject to prevailing wage rate requirements for the period of time covered by the Pay Application.
3. All Subcontractors who are entitled to any portion of payment to be disbursed pursuant to the Pay Application have submitted their CPRs to the Labor Commissioner for all of their employees performing Work subject to prevailing wage rate requirements for the period of time covered by the Pay Application.
4. I have reviewed the Contractor's CPRs submitted to the Labor Commissioner. The CPRs submitted to the Labor Commissioner by the Contractor are complete and accurate for the period of time covered by the Pay Application.
5. I have reviewed the Subcontractors' CPRs submitted to the Labor Commissioner. The CPRs submitted to the Labor Commissioner by the Subcontractors are complete and accurate for the period of time covered by the Pay Application.
6. I declare under penalty of perjury under California law that the foregoing is true and correct. I executed this Certification on the ____ day of _____, 20___ a _____.
(City and State)

By: _____

_____
(Typed or Printed Name)

CONTRACTOR DVBE CLOSE-OUT STATEMENT

The Contractor shall complete this form, as a condition to Final Payment, for purposes of reporting participation by Disabled Veteran Business Enterprises (DVBE) in the Contract for the Project/Bid No. specified below.

Project Name: _____

Bid No.: _____

Name	Address/Phone	Category of Work*	$ Amount of Contract

* Categories of work include: (1) construction services (specify services that DVBE will provide); (2) architecture and engineering services; (3) procurement of materials, supplies and equipment; and (4) information technology.

The undersigned, on behalf of the Contractor, certifies that DVBE participation on the Contract for Bid No. _____equaled _____ dollars ($_____), which represents approximately ____ percent (___%) of the total Contract price including any Change Order/ Construction Change Document for the Project.

Company: _____

Name:_____

Title: _____

Signature: _____

Date: _____

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SPECIAL CONDITIONS

1. **PROJECT**: Ventura High School Softball Site Improvements

2. **OWNER**: Ventura Unified School District ("District")

3. **JOB NUMBER**: Bid No. E04-23

4. **SITE LOCATION:**

Ventura High School
2 N Catalina St, Ventura, CA 93001

5. GENERAL

These Special Conditions supplement the General Conditions and shall form part of the contract and all subcontracts.

6. PREQUALIFICATION

The District has determined that regardless of the Bid Proposal Amount, each bidder on this project must be prequalified. In accordance with Public Contract Code section 20111.5, each bidder must: a) submit a Prequalification Application in accordance with the Instructions for Bidders at least ten (10) business days prior to the last date for the submission of Bid Proposals set forth above, and be prequalified for at least five (5) business day prior to that date.
Pursuant to Public Contract Code section 20111.6, only prequalified bidders will be eligible to submit a bid for contracts of $1 million or more using or planning to use state bond funds. Any bid submitted by a bidder who is not prequalified shall be non- responsive and returned to the bidder. Moreover, any bid listing subcontractors holding C-4, C-7, C-10, C-16, C-20, C34, C-36, C-38, C-42, C-43 or C-46 licenses who have not been prequalified, shall be deemed nonresponsive. Contractors shall qualify at Qualitybidders.com

7. NOTICES AND PERMITS

The Contractor shall give all legal notices as required for the work of the contract unless otherwise specified. The Contractor shall be responsible to obtain all required city permits.

8. STORAGE OF MATERIALS

A. The District will assign to the Contractor allowable working areas for the storage of materials and the use of workmen. The Contractor shall keep his materials and equipment strictly within the limits assigned to him.

B. Materials shall be stored so as to cause no obstruction and shall be stored off sidewalks, roadways and underground services. The Contractor shall be responsible for protecting his materials and equipment.

9. WATER, LIGHT AND POWER

Required utilities, limited to electricity and water, used on the work will be furnished from existing outlets and paid for by the District. The Contractor shall furnish and install necessary temporary distribution systems, including meters, if necessary, from distribution points to points on site where utility is necessary to carry on the work. Upon completion of work, Contractor shall remove all temporary distribution systems.

10. PROTECTION AND GUARDS

The Contractor shall provide such lights, barricades, chain link fencing, guardrails, posted signs, and other protective measures around the area of work at all times. It shall be the contractor's responsibility to keep gates closed and locked to prevent the general public from entering the campus or project area. Utility trenches must be covered while contractors are not on site. This fencing shall be tied shut and locked. A key to any lock provided by the contractor shall be given to the District and the inspector.

11. SANITARY FACILITIES

The Contractor shall provide temporary toilet facilities for on site located as directed by the District for the use of all workmen. The facilities shall be maintained in a sanitary condition at all times and shall be left at the site until the inspector directs removal. Use of District toilet facilities shall not be permitted except by approval of the District.

12. LAYOUT

a. The Contractor shall lay out and establish all construction lines; level, grades and locations required for the work and shall be responsible for the accuracy of it.
b. Elevations and temporary benchmarks shall be taken from the benchmarks set by the surveyor, verify grades, lines, levels, locations and dimensions as indicated. Contractor shall report any errors or inconsistencies before commencing work.
c. Protect all benchmarks and maintain them in place for the duration of the contract or until such time as District authorizes the removal.

13. DUST ABATEMENT

The Contractor shall take precautions to eliminate objectionable dust.

14. A.S.T.M.

Wherever designation is herein referred to, it shall mean the particular edition of the Publication of the American Society for Testing Materials, as listed in Section 117, Title 2.

15. REMOVAL OF SURPLUS MATERIALS

At the completion of the work, the contractor shall remove all equipment, surplus materials, construction debris and rubbish of every sort, and leave the premises in a clean, neat, and orderly condition. The Contractor shall use a metal detector to identify and remove all metal debris around construction areas on site. District trash bins are not to be used by the contractor.

16. RULES, REGULATIONS AND CODES

All work shall be performed in accordance with the latest editions of the following codes, regulations, rules, and documents. Reference is made in the specifications to the below-listed documents and such reference shall have the same force as if these documents have been repeated word for word therein.

A. 2022 Building Standards Administrative Code, Part I, Title 24 C.C.R.

B. 2022 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 C.C.R.; (2021 INTERNATIONAL BUILDING CODE OF THE INTERNATIONAL CODE COUNCIL, WITH CALIFORNIA AMENDMENTS)

C. 2022 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 C.C.R.; (2020 NATIONAL ELECTRIC CODE OF THE NATIONAL FIRE PROTECTION ASSOCIATION, NFPA, WITH CALIFORNIA AMENDMENTS)

D. 2022 CALIFORNIA MECHANICAL CODE (CMC), PART 4, TITLE 24 C.C.R.; (2021 UNIFORM MECHANICAL CODE OF THE INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS, IAPMO)

E. 2022 CALIFORNIA PLUMBING CODE (CPC), PART 5, TITLE 24 C.C.R.; (2021 UNIFORM PLUMBING CODE OF THE INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS, IAPMO)

F. 2022 CALIFORNIA ENERGY CODE, PART 6, TITLE 24 C.C.R.

G. 2019 TITLE 19 C.C.R., PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS

H. 2022 CALIFORNIA FIRE CODE (CFC), PART 9, TITLE 24, C.C.R.; (2021 INTERNATIONAL FIRE CODE OF THE INTERNATIONAL CODE COUNCIL)

I. 2022 CALIFORNIA REFERENCED STANDARDS CODE, PART 12, TITLE 24, C.C.R

J. 2022 CALIFORNIAN GREEN BUILDING STANDARDS CODE, PART 11

K. Latest edition of the Division of State Architect (DSA) Structural Safety Interpretative Manual.

L. Rules of the National Board of Fire Underwriters. (Latest Rules)

M. Safety orders of Industrial Accident Commission, State of California. (Latest Ordinances)

N. National Electric Code. (Latest Code)

O. California Code of Regulations (CR), particularly Title 24, Parts 2, 3, 4, 5, and 9 with California amendments. (Latest Version)

P. City/County of Ventura ordinances. (Latest Requirements)

Q. Site workers need to have completed a 40-hour OSHA personal protection and safety course.

R. The EPA Renovation, Repair & Painting Rule (RRP), Effective on April 22nd, 2010. (Or Latest Update to the Rule)

S. Division of the State Architect (DSA) construction oversight procedures and regulations. (Latest Requirements)

17. NON-INTERFERENCE WITH OTHER CONTRACTORS

Other Contractors will be working on the project site(s) during time of construction. The Contractor must coordinate work with the District staff and other Contractors.

18. LIQUIDATED DAMAGES AND EXTENSIONS OF TIME

The work on the foregoing contract shall be completed by the dates below:

Contract Starting Date: October 21st, 2024 to facilitate ordering materials, submittal approval, etc. (Board Approval of Bid Acceptance to Issue Notice of Award)

Construction Start Date: October 25th, 2024

Construction Completion Date: January 25th, 2024

"Phase 1" Completion Date: November 27th, 2024

Contractor Note: Awarded Contractor shall Provide a Construction Schedule to the District for Review and Approval. Schedule must be reviewed and approved by the District prior to the start of work. Coordination with temporary scoreboard and access for scheduled home-games, sports practices, and potential play-off schedule will need to be coordinated on an ongoing basis through construction.

Note: all work shall be complete, including the punch-list, by the completion date above. Submittal of deferred approval items and ordering and fabrication of materials shall commence immediately upon notice to proceed. The contractor will be given access to the site commencing the notice to proceed, no work to commence until Construction Start Date. All work including punch list items must be completed by the dates listed above.

It is understood that the District will suffer damages; and it being impractical and unfeasible to determine the amount of actual damage, it is agreed that the Contractor shall pay the District as fixed liquidated damages and not as a penalty the sums of **two thousand dollars ($2,000.00)** for each calendar day the contract is delayed. The Contractor and his surety shall be liable for the amount thereof: provided that the Contractor shall not be charged liquidated damages because of any delays in the completion of the work due to unforeseeable causes beyond the control and without the fault or negligence of the Contractor, (including but not restricted to) Acts of God, or of the Public Enemy, Acts of the Government, Acts of the District, or Acts of another Contractor in the performance of a contract with the District, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes and unusually severe weather or delay of subcontractors due to such causes. The Contractor shall within ten (10) days from

the beginning of any such delay (unless the District shall grant a further period of time to the date of final settlement of the Contract) notify the District in writing of the cause of delay, whereupon the District may extend the time for completing the work when in its judgment the findings of fact justify such an extension and its findings of fact thereon shall be final and conclusive on the parties hereto. In event of adverse weather conditions causing delays in the contract, District and Contractor will discuss the addition of days to the construction schedule. Any change to cost or schedule shall be submitted within 10 days of change event. If no cost is submitted within 10 days, District shall assume it is a no-cost change and Contractor will proceed with the work as directed.

19. WORK HOURS AND NON-INTERFERENCE WITH SCHOOL

School Site will be active and occupied during duration of construction.

The contractor shall be responsible for the Safety & Security of the Students, Staff, Construction Workers and General Public during construction. The Contractor and their subcontractors and Vendors who will be working on the school site or campus shall go through the “Live Scan” Screening Process for Background Checks to Verify the worker is allowed to work on a school site in California. As a part of the” Live Scan Screening, the Contractor shall follow all fingerprinting requirements outlined in the contract and shall always keep all onsite personnel separated from staff and students during the work period. At no time shall any worker interact with any student or staff in any way, shape or form, including “Cat Calling or Whistling” at a student or staff member. Any worker found to be conducting themselves in a manner that would cause concern based on erratic or questionable behavior based on this requirement shall be immediately removed from the work site or project and not allowed to return. This requirement shall stay in full force through the duration of this project.

Working Hours for this Project Are: Monday Thru Saturday 7:00AM to 7:00PM (No Sunday Work is Allowed without 48 Notice and Approval by the District)

Contractor shall Each Day Prior to Performing any work on the school sites, Shall Check in with the Front Office and Make the School Site Administrators Aware of the Contractor being onsite and the Locations of where the Fencing work will take place. The Contractor shall make every effort to be as productive as possible while keeping noise to a minimum.
(CONTRACTOR NOTE: THIS PROJECT REQUIRES OVER TIME AND WEEKEND WORK TO COMPLETE ON TIME TO HAVE READY FOR THE RETURN OF STUDENTS IN THE SPRING 2025 SOFTBALL SEASON STARTING FEBRUARY OF 2025.)
The Contractor shall Safe Off/Barricade or otherwise create a safe barrier or separation between the work areas and the egress for students, staff, and General Public. The Contractor shall not leave any unsafe conditions at the end of each workday and shall if needed, install temporary measures to secure the site until the fencing work is completed.
Upon submission of bid, Contractor agrees to commit and comply with and is fully aware that the Project will require a large workforce and mandatory overtime and weekend work to complete the Project on time according to the Contract Documents related to meeting the Project completion date stated in this contract.

Bidding/awarded Contractor shall include all costs in their bid for all overtime and weekend work required along with any requirement for any increased manpower or workforce to complete the Project on time. No additional costs will be accepted by the District for overtime or weekend work or an increased workforce to complete the Project on time to meet the project completion date.

Bidding/awarded Contractor agrees upon submission of bid/award to refund to the District a credit/cost of **two thousand dollars ($2,000.00) for each Saturday** the Contractor does not have a full and complete working crew including management onsite completing the Work to meet the Project Completion Date.

No Sunday Work shall be allowed unless approved by the District forty-eight (48) hours in advance. ***Work considered noisy, i.e., jack hammering, shall be done on weekends, holidays or after school hours (after 3 p.m.) or during school holidays.*** Jack hammering work shall not begin before 7 a.m. and must cease at 7 p.m.

Contractor shall fence off and separate work force from students or faculty during all construction operations and set up safe zones for areas that have accident exposure conditions where any work of any kind is being performed that may have the ability to cause injury to the students, faculty, or public. No Exceptions.

ALL WORKERS WHO ENTER ANY PROPERTY WITHIN THE DISTRICT SHALL SIGN IN AT THE ADMINISTRATION OFFICE FOR THAT SCHOOL SITE OR WITH THE PRIME CONTRACTOR UPON ENTERING OR EXITING THE SCHOOL SITE. EACH CONTRACTOR OR THEIR SUBCONTRACTORS/ SUPPLIERS/DELIVERY PERSONNEL SHALL WEAR AT ALL TIMES, AN IDENTIFICATION BADGE AND HIGH VISIBILITY VEST TO BE EASILY IDENTIFIED BY THE DISTRICT. THIS REQUIREMENT IS MANDATORY!

The District shall assist the Contractor in designating the areas of work and assist with clearing the area and making it available to the Contractor during construction.

20. KEYS

Keys to existing buildings where access is required related to the project may be signed out through the Facilities Services Department located at 359 South Victoria Avenue, between 7:30 A.M. - 3:30 P.M. Monday thru Friday. All keys must be returned and accounted for before final payments will be paid. Contractor will be held responsible for any keys lost, stolen, not returned, or signed off. The Contractor will bear all costs for re-keying all locks due to keys not returned.

21. SCOPE OF WORK ITEMS TO BE ESPECIALLY AWARE OF AND NOTED AS A PART OF THIS CONTRACT THAT WILL BE COMPLETED AT THE SCHOOL SITE:

The Contractor shall supply all Labor, Materials and Equipment required or necessary to complete the work called out in the contract documents and to be aware that this contract will require the following portions of work to be completed related to the **VENTURA HIGH SCHOOL SOFTBALL SITE IMPROVEMENTS.** Scope of work for the improvements of softball field at Ventura High School entails all work shown or indicated on the DSA Approved KBZ Drawings dated 1/12/24 containing 28 plans sheets of work to be completed. Within the DSA Approved Drawings are all drawings, specifications and other information from the manufacturer referred to as the NEVCO PC drawings, which includes demolition of existing conditions called out on plans, installation of new scoreboard, foundation and columns for scoreboard, steel support assemblies required for scoreboard installation, new dugout, fencing, hardscape and softscape improvements, irrigation, and underground and above grade electrical and low voltage or data work to be completed as shown along with other misc. portions of work required for improvements of softball fields.

Work is to be completed during the Fall 2024 Session of School as follows:

1. **Job Walk on September 24, 2024, at 11:00am at the stadium**
2. **Bid Date will be October 11th, 2024, at 1:00pm**
3. **Tentative Award Date depending on Board Approval will be October 21th, 2024**
4. **Job Start Date will be October 25th, 2024**
5. **"Phase 1" completion of trenching, irrigation, scoreboard installation, field renovation, and hydroseed to be completed by November 27th, 2024**
6. **"Phase 2" completion of dugouts and remaining site work to be completed by January 25th, 2024.**

Contractor as a part of this project shall provide all labor, materials and equipment required or necessary to complete the following items at a minimum. For concrete pavements, walkways, curbs, gutters, and walls, Contractor shall layout expansion and control joints per drawings and specifications and mark joint locations for review by Owner's Construction Representative prior to ordering concrete. Contractor shall construct concrete walkway per detail 2/CD-1, construct joints in concrete walkway surfacing per detail 3/CD-1, construct concrete walkway retaining curb to elevations on plan and per detail 4/CD-1, construct concrete walkway edge curb to elevation on plan per detail 5/CD-1, construct fence and/or gate per Architect plans and specifications, and construct concrete mow curb per detail 6/CD-1. Contractor is responsible for grounding and bonding at fencing and fence posts per spec section 32 31 13. Contractor shall construct accessible parking pavement markings per detail 7 and 8/CD-1, including signage per detail 1/A1.01. Contractor shall construct concrete curbs to elevation and curb ramps shown on plans and per detail 16/CD-2 and 9/CD-1. Contractor shall construct cast in place catch basins, HDPE storm drain lines, connections to existing catch basins with fittings as necessary, and solid cover fittings for existing catch basins. Contractor shall provide traffic rated lids for any area where vehicle traffic may occur.

Contractor shall install scoreboard that was previously used at Larabee Stadium (Owner provided, coordination needed for delivery to site). Scoreboard will be available for installation after November 18th, 2024. Contractor shall construct steel assembly to support scoreboard. The Contractor shall provide temporary bracing and shoring for all structural members as required for structural stability of the structure during all phases of construction. Contractor shall take all steps necessary to ensure proper alignment of the structure after the installation of all structural and finish materials. This shall include any necessary preloading of the structure to determine final position of the completed work. All foundation excavations shall be inspected and approved by Inspector of Record and Geotechnical Engineer prior to forming and placement of reinforcing or concrete. The sides and bottoms of excavations which are to have concrete contact must be moistened several times just prior to pouring upon them per Foundation Notes on SB0.2. De-water footings, as required, to maintain dry working conditions. Concrete footings shall be poured in neat excavations, without side forms whenever possible. Over excavate 4' below finished sub grade (The adjacent grade of score board foundations) and 3' beyond footings as shown per plans. Scarify an additional 6", moistened condition, and recompact to 90% of max density.

Work includes demo of site asphalt & site concrete existing, removal/disposal of site asphalt & site concrete, soils preparation for the scoreboard foundation location and for drilling of caissons for new scoreboard support columns, shoring of caisson holes as required including the use of a stabilizing type drilling mud to stabilize the walls of the drilled caisson hole until concrete placement occurs, installation of reinforcement cages for caissons and scoreboard

support columns, concrete placement shall follow caisson hole drilling and reinforcement installation along with support column for scoreboard being properly laid per the project plans both in location and elevation. The Contractor shall place 4,500 PSI Concrete minimum for caisson footings per project plans and ensure mix design allows for concrete to meet strength within 7 -14 days to meet project schedule requirements.

Contractor shall construct CMU dugout per A2.01. Contractor shall construct concrete foundation, roofing membrane, electrical outlets, benches, storage shelf, access gates, and chain link fence and post per plans. Marine plywood is required for storage shelf. Roof must be installed by a pre-approved Garland Contractor to meet warranty requirements. Work with Garland Representative for field observations and final inspection of roof system. Contractor shall install visitor chain link dugout with privacy slats per detail 4/A1.01. CMU blocks shall not be cut vertically to fit, use factory made half sized blocks where required. CMU block shall be solid grouted in a stack bond pattern. CMU structure left to be unpainted. Contractor shall provide a stand alone bat rack as shown on A1.02.

Contractor shall be responsible for all trenching and connection of conduit back to existing electrical panel "LP" in basement of pool heater equipment room. Outlets and scoreboard power will be connected to existing panel. Contractor shall include all core drilling and patching as required for scope of work. Any shut downs should be coordinated with site staff.

If the contractor proposes Directional Drilling, the Conduit sizes called out in the project documents will need to be upsized for the larger circuits that may be needed for an exceptionally long electrical run. The Contractor during the installation of the electrical and control circuits shall install pull boxes of various types and sizes as needed (Steel, Plastic, Concrete or other) or required as a part of the installation. All electrical materials being utilized shall all be outdoor rated for the salt and moist air environment at this location. Other electrical materials required are ridged conduit, plastic conduit, seal tight electrical conduit, Uni-strut products of any kind for conduit mounting and installations, Electrical switches, duplex receptacle service outlets in weather proof boxes, & disconnects for power and etc as required, Electrical in ground electrical pull boxes with traffic rated lids, Ground Rods-Ground wiring and etc., Ground Rods in ground boxes made up of concrete with a traffic rated lid where required, Ground wire and ground wire bonding to various locations at both the POC for power and at the termination points with in the reinforcement bar cages at the scoreboard columns within the caisson foundation where CAD Welding will be required for ground bonding. The Contractor shall review the scoreboard drawings to verify and confirm grounding points within the scoreboard if any. The Contractor is responsible to provide new grounding at new scoreboard location. The Contractor shall provide and install new conduit to existing distribution panel. Once the scoreboard is installed and energized by the Contractor, the Contractor shall notify the district and scoreboard sales rep to assist in scoreboard start up and programming for full operation to occur.

Contractor shall install Owner provided items including 5 row metal bleachers at two locations. Bleachers are already located on site, Contractor is responsible to move them aside to complete new site work and complete installation per plan. Contractor shall provide new stainless steel Simpson Strong Tie Titen HD Heavy Duty Screw Anchors.

Contractor shall protect in place and keep in working condition all existing irrigation systems not a part of this work. Contractor shall repair or replace any existing mainline segment, lateral, irrigation control wire, hydraulic tubing, remote control valve, valve box, quick coupler, or any other irrigation system component damaged during the renovation process. Contractor shall

field verify existing static water pressure. Contractor is responsible for any trench settling or irrigation head settling. Contractor shall sleeve all PVC irrigation pipes and wires installed under paving. In the event of low head drainage, the Contractor shall install inline check valves in laterals. Contractor shall be responsible to repair any damage to the existing lawn areas due to construction activities or lack of water due to construction. Contractor shall be responsible for adjusting all pressure reducing valves to obtain the operating pressure as indicated in the irrigation legend. Remove existing Auto Controller and install new Auto Controller at approximately the same location. Reconnect existing electrical power to new auto controller. Contractor shall install Carson-Brooks valve boxes only as per Ventura Unified School District standards. Contractor shall be responsible for all pressure tests, and irrigation coverage testing. Contractor shall provide a 90 day maintenance period on all planting and hydroseed areas.

The Contractor shall field verify existing actual conditions prior to the start of work and notify the Architect of any discrepancies. Contractor shall verify all restrooms, path of travel, and other items as noted as existing on the plans and referenced as part of the DSA submittal. The Contractor shall perform all demolition work required including the removal and proper disposal of all debris, broken concrete, etc. from the site. Contractor shall protect existing fence and/or gate, catch basins, AC pavement, utility and/or pool boxes, trees, softball field area, and concrete sidewalk to remain per demolition plan sheet D-1. Contractor shall construct saw cut line as shown on plans and per detail 1/CD-1. Contractor shall demolish and remove existing concrete pavement section, AC pavement section, bleachers, bench, chain link fence and/or gate, CMU walls and footings of dugout, and concrete curbs per demolition plan sheet D-1. The Contractor shall be responsible for all damage resulting from demolition at no additional cost to the Owner. The Contractor shall protect and not damage any portion of the existing installation not being removed. Any damage on existing facilities indicated to remain shall be replaced equal to original conditions and to the satisfaction of the Owner. All trades concerned shall coordinate each other's work prior and during construction. All trenching shall be performed with a spotter and shall continuously observe excavations to locate existing irrigation lines, conduits, and any other utilities or subterranean equipment. The Contractor is responsible to provide temporary perimeter fencing where all work will be occurring, in addition to complying with all CAL OSHA and any other safety requirements as applicable to keep public out of work area during and after work hours.

The Contractor shall retain a licensed land surveyor to stake vertical and horizontal controls for layout of the work. The Contractor shall verify all existing conditions, grades, elevation, and dimensions to familiarize themselves with the existing conditions and specific work locations. Contracts shall determine all locations of existing utility service in are to be excavated prior to the beginning of excavation. Contractor shall protect all utility lines and service lines to remain when encountered during construction. Contractor shall contact school operations/maintenance staff to shut off power if conduits are suspected of being in the work area but can not be located. Contractor shall construct gravity pipelines (sewer, storm drain) ahead of other underground conduits. Contractor shall grade unpaved areas within limit of disturbance to finished grade, flowlines and contours per plan and to provide smooth transition between new and existing improvements. Contractor is required to implement and maintain any required SWPPP/BMP practices. Contractor shall be responsible to ensure employees and subcontractors are trained regarding SWPPP requirements and to maintain records of the installation, modification, inspection, and maintenance of storm water pollution prevention measures included. Contractor shall install and maintain straw waddle, temporary silt fencing, pollution containment area, concrete wash out station, and staging areas. Reference Spec Section 31 25 00 for requirements. Over the evolution of the course of construction, the

Contractor shall be responsible for not only implementing the SWPPP plan but to make adjustments and expansions as necessary. These measures shall be implemented at no extra cost to the District. The Contractor shall be responsible for the enforcement. Work shall comply with the provision of chapter 33 of CBC and CFC, "Fire safety during construction and demolition."

The Contractor shall notify Dig alert at least (2) days prior to starting work and shall coordinate all work with utility companies. Contractor is responsible to protect all existing surfaces during scoreboard installation and construction including and not limited to plywood protection and base protection under equipment and outriggers. The Contractor shall excavate to required depths and dimensions as indicated in drawings, cut square and smooth with firm level bottom.

Contractor shall prioritize trenching, irrigation, scoreboard installation, and turf renovation work to be completed early in the construction schedule to allow for hydroseed to be completed as soon as possible so turf may be established prior to start of softball season. **These items, including hydroseed installation, must be completed by 11/27/2024**. Contractor is responsible for installing fence screen around perimeter of new seed installation to protect during period of establishment. “Phase 2” of project for installation of dugout and site work can be completed after field renovation work is done. **Upon notice of intent to award, Contractor shall begin to provide submittals for all material and equipment that is critical to project schedule.**

Contractor is responsible to provide and coordinate craning equipment as required to complete scope of work and notify any relevant jurisdictions of impacts. The contractor is responsible for coordination of all testing and inspections as required by DSA. Fire lane shall remain open. The Contractor shall comply with all AHJ (Authority Having Jurisdiction) requirements, obtain all required permits or inspections for any work affecting areas adjacent to the site, provide any required traffic control and re-route signage to comply with all laws and regulations.

Contractor shall provide traffic control and barricading the location of the softball field for the duration of the project (including any additional traffic control that may be required to allow for access to adjacent streets during school and events)

Questions or conflicts arising out of such examination prior to or during operation shall be immediately directed to the attention of the VUSD Representative for necessary action or decisions before resuming operation. Contractor shall be responsible for repair or replacement at no cost to the VUSD Representative for features or conditions damaged through failure to comply with the procedures per specifications.

Contractor shall include in bid, ALL costs to supply a Payment and Performance Bond for the total cost of the bid. District will not except any additional cost related to these two items which are contract requirements. Contractor shall include in bid, ALL costs to provide Insurance coverages per the contract requirement set forth in the contract documents. District will not except any additional cost related to these insurance requirements. The Awarded Contractor shall immediately submit and order all long lead items as related to the scope of work, and any other item required as to not delay the project from being completed on time per schedule. The Contractor shall include any final testing, finish test or verification item or process to successfully close out and certify the project upon completion. **PLANS & SPECIFICATIONS TO FOLLOW ON NEXT PAGES.**

The Contractor **shall, upon given notice of award, begin immediately with the submission**

of all material and other related submittals to have this process for submission completed within 30 days. The district's intention is for the awarded contractor to begin immediately with the work upon the notice to proceed and as soon as the submittal for materials and related items is approved.

The contractor shall, always while on any school site, wear a High Visibility Safety Vest, Hard Hat, Safety Glasses, Gloves, Proper work boots, and Proper Clothing. No Shorts or sleeveless shirts of any kind. This requirement is mandatory. Any individual found to not follow this requirement shall be removed immediately and not allowed back on any school site until the violation is corrected. (THIS IS A MANDATORY REQUIREMENT)

Contractor shall field verify prior to bid, all existing "SITE" conditions at all exterior locations where work will take place at the surrounding areas/site.

Contractor shall thoroughly familiarize themselves with the condition of all substrates to ensure their bid is reflective of the amount of labor, materials and equipment that will be needed or required to complete **VENTURA HIGH SCHOOL SOFTBALL SITE IMPROVEMENTS.**
No equipment or materials shall be left on site un-secured due to vandalism and the threat of theft or possibly fire UNLESS SECURLEY STORED. The Contractor shall make sure all items are secured or properly stored each day while on site so any weather event will not scatter debris around the work zone or campus endangering students or faculty.

All Managing or Supervisory workers shall be fingerprinted in accordance with state law relating to working on school sites. Contractor prior to the start of work shall submit to "the district" all fingerprint information for each worker who will be on site. No work shall commence until this information has been submitted, reviewed, and approved by the district. (CONTRACTOR NOTE: THIS REQUIREMENT IS MANDATORY. NO WORK WILL COMMENCE UNTIL THIS REQUIREMENT IS COMPLIED WITH. CONTRACTOR WILL BE DELAYING THE PROJECT START AND WILL BE NOTIFIED BY THE DISTRICT OF POSSIBLE LIQUIDATED DAMAGES BEING INITIATED DUE A CONTRACTOR CAUSED DELAY IN THE START OF THE PROJECT DUE TO NON-CONFORMANCE WITH THIS MANDATORY REQUIREMENT)

The contractor shall have on site, always, a project Superintendent who is solely responsible for managing all on-site work activities with all trades or subcontractors. The Superintendent shall not perform any physical work of any kind. The superintendent's sole purpose is to manage their work force to assure the project is completed in accordance with the contract documents and completion date to obtain close out and certification.

Project Reporting & Record Keeping by Awarded Contractor (Mandatory Project Daily Report & Sign In Sheet): As a part of this bid and the Project, the Ventura Unified School District has made it a mandatory requirement that the awarded contractor and their subcontractors-vendors or specialty tradespersons shall submit to the District on a daily basis and no later than at the end of each work day (no later than 12 midnight of that day), a completed hard copy original daily report of that day's Work activities that were performed at each Site by the Contractor, any Subcontractors or vendors and specialty tradespersons. The completed daily report required by each party shall include at a minimum the following information: (a) name of Contractor, Subcontractor, vendor and/or specialty tradespersons, (b) names of ALL individual persons performing any Work on Site, (c) type of trade of the individual worker who is performing Work onsite, (d) hours worked by individual trade worker that day, (e) location of Work where the individual trade worker was performing that day's work, (f) names of

supervisors for awarded Contractor and any Subcontractors, vendors or specialty tradespersons working on the Project Site, (g) hours onsite by supervisors, (h) information on companies' supervisors and who they represent while onsite, (i) all hours worked onsite by each supervisor, (j) a complete list of all equipment onsite DAILY being utilized for the Work to complete the Project from the Contractor and any Subcontractors, vendors or specialty tradespersons, (k) any materials delivered onsite of any kind. In addition to the submission of the daily report each day by the Contractor and its Subcontractors, vendors and/or specialty tradespersons, each party shall provide to the District a completed hard copy "sign in and sign out sheet" for that day showing each individual worker's name, trade title, company employed by, and signature.

The awarded Contractor and its Subcontractors, vendors and/or specialty tradespersons shall be aware and take note that as a part of this Contract **the District shall have the right and will back charge or deduct from the awarded Contractor's Contract after notification, a penalty fee of five hundred dollars ($500.00) for each time this requirement is not met by the awarded Contractor and/or any of its Subcontractors, vendors and/or specialty tradespersons.** Any party, prime contractor, subcontractor, vendor or specialty tradesperson providing a bid or proposal for this Project hereby acknowledges and agrees to comply with this requirement upon submission.

PLANS:
VENTURA HIGH SCHOOL GIRLS SOFTBALL IMPROVEMENTS DATED 01/12/2024

SCHEDULE OF DRAWINGS

SHEET NO.	SHEET REFERENCE	SHEET TITLE
1	G-001	TITLE SHEET
2	G-1	TITLE SHEET
3	D-1	DEMOLITION SHEET
4	C-1	SITE IMPROVEMENT PLAN
5	CD -1	DETAILS
6	CD -2	CONSTRUCTION DETAILS
7	EC-1	EROSION CONTROL PLAN
8	L-100	IRRIGATION PLAN
9	L-101	LANDSCAPE DETAILS
10	L-200	TURF RENOVATION PLAN
11	L-300	LANDSCAPE DETAILS
12	L-301	LANDSCAPE DETAILS
13	L-400	SHADE PLAN
14	A-100	OVERALL CAMPUS FIRE ACCESS SITE PLAN
15	A-101	SITE DETAILS
16	A-102	ENLARGED SITE PLANS
17	A-201	DUGOUT FLOOR PLAN, ROOF PLAN, ELEVATIONS, SECTION & DETAILS
18	S-001	STRUCTURAL GENERAL NOTES
19	S-002	STRUCTURAL GENERAL NOTES
20	S-101	TYPICAL DETAILS
21	S-102	TYPICAL DETAILS
22	S-201	FOUNDATION & ROOF FRAMING PLANS
23	S-301	STRUCTURAL DETAILS
24	SB0.1	COVER SHEET
25	SB0.2	STRUCTURAL NOTES & SPECIAL INSPECTIONS
26	SB0.3	EXAMPLE DSA 103 - TESTING AND INSPECTIONS
27	SB3.2	THREE COLUMN CAISSON - BOLTED
28	SB5.1	ATTACHMENT DETAILS

Ventura High School Girls Softball Improvements Project Manuel Dated 1/12/2024.

Earth Systems Evaluation of Liquefaction Potential Letter Dated March 19th, 2024.

VENTURA HIGH SCHOOL
GIRLS SOFTBALL IMPROVEMENTS

for VENTURA UNIFIED SCHOOL DISTRICT
2 N CATALINA ST · VENTURA, CA 93001

PROJECT MANUAL

12 JANUARY 2024 · KBZ JOB NO. 23046
A#03-123899, FILE 56-H7

Owner: VENTURA UNIFIED SCHOOL DISTRICT
255 W Stanley Ave · Ventura, CA 93001 · Phone (805) 641-5000

Architect: KRUGER BENSEN ZIEMER ARCHITECTS, INC.
199 Figueroa St · Suite 100A · Ventura, CA 93001
Phone (805) 650-1033 · www.kbzarch.com

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SPECIFICATION MANUAL
for the construction of:
Ventura High School
Girls Softball Improvements

KRUGER BENSEN ZIEMER ARCHITECTS, INC.
199 Figueroa St, Suite 100A, Ventura, CA 93001



Todd A Jespersen	C-25839	
Principal Architect	License No.	Stamp

CIVIL ENGINEER:
FLOWERS & ASSOCIATES, INC.
115 W Canon Perdido St, Santa Barbara, CA 93101



Robert Schmidt	71335	
Project Engineer	License No.	Stamp

LANDSCAPE ARCHITECT:
JORDAN & BAIN, LANDSCAPE ARCHITECTS INC.
459 N Ventura Ave, CA 93001



John James “Jay” Bain III	3193	
Landscape Architect	License No.	Stamp

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 03-123899 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 09/05/2024

PROJECT MANUAL
for
VENTURA HIGH SCHOOL
GIRLS SOFTBALL IMPROVEMENTS
2 N Catalina St
Ventura, CA 93001

OWNER: **Ventura Unified School District**
255 W Stanley Ave
Ventura, CA 93001
(805) 641-5000

ARCHITECT: **KRUGER BENSEN ZIEMER ARCHITECTS, INC.**
199 Figueroa St, Suite 100A
Ventura, CA 93001
(805) 650-1033

CIVIL ENGINEER: **FLOWERS & ASSOCIATES INC.**
115 W Canon Perdido St
Santa Barbara, CA 93101
(805) 966-2224

LANDSCAPE ARCHITECT: **JORDAN & BAIN LANDSCAPE ARCHITECTS INC.**
459 N Ventura Ave
Ventura, CA 93101
(805) 642-3641

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SCHEDULE OF DRAWINGS

GENERAL

1. G-001 TITLE SHEET

CIVIL

2. G-1 CIVIL TITLE SHEET
3. D-1 DEMOLITION PLAN
4. C-1 SITE IMPROVEMENT PLAN
5. CD-1 CONSTRUCTION DETAILS
6. CD-2 CONSTRUCTION DETAILS
7. EC-1 EROSION CONTROL PLAN & DETAILS

LANDSCAPE

8. L-100 IRRIGATION PLAN
9. L-101 IRRIGATION NOTES & LEGEND
10. L-200 TURF RENOVATION PLAN
11. L-300 LANDSCAPE DETAILS
12. L-301 LANDSCAPE DETAILS
13. L-400 SHADE PLAN

ARCHITECTURAL

14. A-100 OVERALL CAMPUS PLAN
15. A-101 SITE DETAILS
16. A-102 ENLARGED SITE DEMO PLAN; ENLARGED SITE NEW PLAN
17. A-201 TYPICAL DUGOUT FLOOR PLAN, ROOF PLAN, ELEVATIONS, AND DETAILS

STRUCTURAL (not part of DSA review)

18. S-001 STRUCTURAL GENERAL NOTES
19. S-002 STRUCTURAL GENERAL NOTES
20. S-101 TYPICAL DETAILS
21. S-102 TYPICAL DETAILS
22. S-201 DUGOUT FOUNDATION AND ROOF FRAMING PLANS
23. S-301 DUGOUT STRUCTURAL DETAILS

SCOREBOARD MANUFACTURER DRAWINGS BY NEVCO

24. SB0.1 (SCOREBOARD) COVER SHEET
25. SB0.2 (SCOREBOARD) STRUCTURAL NOTES
26. SB0.3 EXAMPLE DSA-103 TESTING AND INSPECTION FORM
27. SB3.2 THREE COLUMN CAISSON - BOLTED
28. SB5.1 ATTACHMENT DETAILS

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SECTION 01 1000 - SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Work under Owner's separate contracts.
4. Owner-furnished/Contractor-installed (OFCI) products.
5. Contractor's use of site and premises.
6. Coordination with occupants.
7. Work restrictions.
8. Specification and Drawing conventions.

B. Related Requirements:

1. Section 01 5000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.
2. Section 01 7300 "Execution" for coordination of Owner-installed products.

1.2 DEFINITIONS

A. Work Package: A group of specifications, drawings, and schedules prepared by the design team to describe a portion of the Project Work for pricing, permitting, and construction.

1.3 PROJECT INFORMATION

A. Project Identification: VHS Girls Softball Improvements.

1. Project Location: 2 North Catalina St, Ventura, CA 93001.

a. Girls Softball Field is at the southeast corner of the site, near the intersection of N Seaward Ave and E Main St.

B. Owner: Ventura Unified School District.

1. Owner's Representative: Adam Dutter, Bond Program Manager.

C. Architect: Kruger Bensen Ziemer Architects Inc..

1. Architect's Representatives: Todd Jespersen and Jonathan Lee.

D. Architect's Consultants: Architect has retained the following design professionals, who have prepared designated portions of the Contract Documents:

1. Civil: Flowers & Associates.

a. Civil Engineering Representative: Robert Schmidt.

2. Landscape: Jordan-Bain Landscape Architects Inc.

a. Landscape Architect Representative: Jay Bain

1.4 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and includes, but is not limited to, the following:

1. New site improvements to the Girls Softball Field including new (relocated) scoreboard, low-rise bleachers, dugout, hardscape, accessible parking and path-of-travel improvements, and other Work indicated in the Contract Documents.

B. Type of Contract:

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

1.5 OWNER-FURNISHED/CONTRACTOR-INSTALLED (OFCI) PRODUCTS

A. Owner's Responsibilities: Owner will furnish products indicated and perform the following, as applicable:

1. Provide to Contractor Owner-reviewed Product Data, Shop Drawings, and Samples.
2. Provide for delivery of Owner-furnished products to Project site.
3. Upon delivery, inspect, with Contractor present, delivered items.

a. If Owner-furnished products are damaged, defective, or missing, arrange for replacement.

4. Obtain manufacturer's inspections, service, and warranties.
5. Inform Contractor of earliest available delivery date for Owner-furnished products.

B. Contractor's Responsibilities: The Work includes the following, as applicable:

1. Designate delivery dates of Owner-furnished products in Contractor's construction schedule, utilizing Owner-furnished earliest available delivery dates.
2. Review Owner-reviewed Product Data, Shop Drawings, and Samples, noting discrepancies and other issues in providing for Owner-furnished products in the Work.
3. Receive, unload, handle, store, protect, and install Owner-furnished products.
4. Make building services connections for Owner-furnished products.

5. Protect Owner-furnished products from damage during storage, handling, and installation and prior to Substantial Completion.
6. Repair or replace Owner-furnished products damaged following receipt.

C. Owner-Furnished/Contractor-Installed (OFCI) Products:

1. 5-Row Metal Bleachers

a. Quantity: Two units.
b. Contractor shall provide and install (10) new stainless steel Simpson Strong-Tie “Titen HD” heavy duty screw anchors per bleacher unit.

2. Scoreboard

a. Scoreboard is currently installed at the VHS football field. Contractor shall disconnect, relocate, and install the scoreboard at the Girls Softball Field, including new foundations and support columns per the drawings.
b. Contractor shall provide new power feed and disconnect per drawings.

1.6 CONTRACTOR'S USE OF SITE AND PREMISES

A. Restricted Use of Site: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.

B. Limits on Use of Site: Limit use of Project site to Work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1. Driveways, Walkways and Entrances: Keep driveways, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or for storage of materials.

a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

C. Condition of Existing Grounds: Maintain portions of existing grounds, landscaping, and hardscaping affected by construction operations throughout construction period. Repair damage caused by construction operations.

1.7 COORDINATION WITH OCCUPANTS

A. Partial Owner Occupancy: Owner will occupy the premises during entire construction period, with the exception of areas under construction. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations. Maintain existing exits unless otherwise indicated.

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

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

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

1.8 WORK RESTRICTIONS

A. Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets, work on public streets, rights of way, and other requirements of authorities having jurisdiction.

B. On-Site Work Hours: Limit work to between 7:00 a.m. to 7:00 p.m., Monday through Friday, unless otherwise indicated. Work hours may be modified to meet Project requirements if approved by Owner and authorities having jurisdiction.

1. Weekend Hours: Only with prior authorization.
2. Early Morning Hours: Only with prior authorization..
3. Hours for Utility Shutdowns: Only with prior authorization..
4. Hours for Core Drilling or other noisy activity: Only with prior authorization..

C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging for temporary utility services according to requirements indicated:

1. Notify Architect and Owner not less than two days in advance of proposed utility interruptions.
2. Obtain Owner's written permission before proceeding with utility interruptions.

D. Noise, Vibration, Dust, and Odors: Coordinate operations that may result in high levels of noise and vibration, dust, odors, or other disruption to Owner occupancy with Owner.

1. Notify Architect and Owner not less than two days in advance of proposed disruptive operations.
2. Obtain Owner's written permission before proceeding with disruptive operations.

E. Smoking and Controlled Substance Restrictions: Use of tobacco products, alcoholic beverages, and other controlled substances on Owner's property is not permitted.

F. Employee Identification: Provide identification tags for Contractor personnel working on Project site. Require personnel to use identification tags at all times.

G. Employee Screening: Comply with Owner's requirements for drug and background screening of Contractor personnel working on Project site.

1. Maintain list of approved screened personnel with Owner's representative.

1.9 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
2. Text Color: Text used in the Specifications, including units of measure, manufacturer and product names, and other text may appear in multiple colors or underlined as part of a hyperlink; no emphasis is implied by text with these characteristics.
3. Hypertext: Text used in the Specifications may contain hyperlinks. Hyperlinks may allow for access to linked information that is not residing in the Specifications. Unless otherwise indicated, linked information is not part of the Contract Documents.
4. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 00 Contracting Requirements: General provisions of the Contract, including General and Supplementary Conditions, apply to all Sections of the Specifications.

C. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

D. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
2. Abbreviations: Materials and products are identified by abbreviations scheduled on Drawings and published as part of the U.S. National CAD Standard.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 1000

SECTION 01 2500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

B. Related Requirements:

1. Section 01 2300 "Alternates" for products selected under an alternate.
2. Section 01 6000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.2 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents.

1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required to meet other Project requirements but may offer advantage to Contractor or Owner.

1.3 ACTION SUBMITTALS

A. Substitution Requests: Submit documentation identifying product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use form acceptable to Architect.
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

a. Statement indicating why specified product or fabrication or installation method cannot be provided, if applicable.
b. Coordination of information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
c. Detailed comparison of significant qualities of proposed substitutions with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes, such as performance, weight, size,

durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.

d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
e. Samples, where applicable or requested.
f. Certificates and qualification data, where applicable or requested.
g. List of similar installations for completed projects, with project names and addresses as well as names and addresses of architects and owners.
h. Material test reports from a qualified testing agency, indicating and interpreting test results for compliance with requirements indicated.
i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
j. Detailed comparison of Contractor's construction schedule using proposed substitutions with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
k. Cost information, including a proposal of change, if any, in the Contract Sum.
l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents, except as indicated in substitution request, is compatible with related materials and is appropriate for applications indicated.
m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor through Construction Manager of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.4 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.5 PROCEDURES

A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

1.6 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
b. Substitution request is fully documented and properly submitted.
c. Requested substitution will not adversely affect Contractor's construction schedule.
d. Requested substitution has received necessary approvals of authorities having jurisdiction.
e. Requested substitution is compatible with other portions of the Work.
f. Requested substitution has been coordinated with other portions of the Work.
g. Requested substitution provides specified warranty.
h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Architect will consider requests for substitution if received within 60 days after the Notice of Award. Requests received after that time may be considered or rejected at discretion of Architect.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
b. Requested substitution does not require extensive revisions to the Contract Documents.
c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
d. Substitution request is fully documented and properly submitted.
e. Requested substitution will not adversely affect Contractor's construction schedule.

f. Requested substitution has received necessary approvals of authorities having jurisdiction.
g. Requested substitution is compatible with other portions of the Work.
h. Requested substitution has been coordinated with other portions of the Work.
i. Requested substitution provides specified warranty.
j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 2500

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SECTION 01 2600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for handling and processing Contract modifications.

B. Related Requirements:

1. Section 01 2500 "Substitution Procedures" for administrative procedures for handling requests for substitutions made after the Contract award.
2. Section 01 3100 "Project Management and Coordination" for requirements for forms for contract modifications provided as part of web-based Project management software.

1.2 MINOR CHANGES IN THE WORK

A. Architect will issue through Construction Manager supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710.

1.3 PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: Architect or Construction Manager will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. Work Change Proposal Requests issued by Architect or Construction Manager are not instructions either to stop work in progress or to execute the proposed change.
2. Within time specified in Proposal Request or 10 days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.

a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
c. Include costs of labor and supervision directly attributable to the change.
d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish

times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

e. Quotation Form: Use forms acceptable to Architect and Construction Manager.

B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Construction Manager.

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Section 01 2500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
7. Proposal Request Form: Use form acceptable to Construction Manager.

1.4 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Work Change Proposal Request, Construction Manager will issue a Change Order for signatures of Owner and Contractor on AIA Document G701.

B. Changes to the DSA-approved drawings and specifications that affect structural, accessibility, or fire-life safety features shall be made by an addendum or a construction change document (CCD) approved the Division of the State Architect (DSA), as required by Section 4-338, Part 1, Title 24, CCR.

1.5 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive: Construction Manager may issue a Construction Change Directive on AIA Document G714. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 2600

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SECTION 01 2900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.

B. Related Requirements:

1. Section 01 2600 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
2. Section 01 3200 "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.

1.2 DEFINITIONS

A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.3 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.

1. Coordinate line items in the schedule of values with items required to be indicated as separate activities in Contractor's construction schedule.
2. Submit the schedule of values to Architect through Construction Manager at earliest possible date, but no later than seven days before the date scheduled for submittal of initial Applications for Payment.

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

1. Identification: Include the following Project identification on the schedule of values:

a. Project name and location.
b. Owner's name.
c. Owner's Project number.
d. Name of Architect.
e. Architect's Project number.
f. Contractor's name and address.

g. Date of submittal.

2. Arrange schedule of values consistent with format of AIA Document G703.
3. Arrange the schedule of values in tabular form, with separate columns to indicate the following for each item listed:

   a. Related Specification Section or division.
   b. Description of the Work.
   c. Name of subcontractor.
   d. Name of manufacturer or fabricator.
   e. Name of supplier.
   f. Change Orders (numbers) that affect value.
   g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent. Round dollar amounts to whole dollars, with total equal to Contract Sum.

      1) Labor.
      2) Materials.
      3) Equipment.

4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.

   a. Differentiate between items stored on-site and items stored off-site.
6. Overhead Costs, Separate Line Items: Show cost of temporary facilities and other major cost items that are not direct cost of actual work-in-place as separate line items.
7. Temporary Facilities: Show cost of temporary facilities and other major cost items that are not direct cost of actual work-in-place as separate line items.
8. Closeout Costs. Include separate line items under Contractor and principal subcontracts for Project closeout requirements in an amount totaling five percent of the Contract Sum and subcontract amount.
9. Schedule of Values Revisions: Revise the schedule of values when Change Orders or Construction Change Directives result in a change in the Contract Sum. Include at least one separate line item for each Change Order and Construction Change Directive.

1.4 APPLICATIONS FOR PAYMENT

A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments, as certified by the Project Inspector, Architect, and Construction Manager and paid for by Owner.

B. Payment Application Times: The date for each progress payment is indicated in the Owner/Contractor Agreement. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

C. Payment Application Times: Submit Application for Payment to Construction Manager by the twenty-fifth of the month. The period covered by each Application for Payment is one month, ending on the last day of the month.

1. Submit draft copy of Application for Payment five days prior to due date for review by Construction Manager.

D. Application for Payment Forms: Use AIA Document G702 and AIA Document as form for Applications for Payment.

1. Other Application for Payment forms proposed by the Contractor may be acceptable to Construction Manager and Owner. Submit forms for approval with initial submittal of schedule of values.

E. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Construction Manager will return incomplete applications without action.

1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.

F. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.

1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment for stored materials.
2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
3. Provide summary documentation for stored materials indicating the following:

a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.

c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.

G. Transmittal: Submit three signed and notarized original copies of each Application for Payment to Construction Manager by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

H. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.

1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
2. When an application shows completion of an item, submit conditional final or full waivers.
3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
5. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.

I. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.
2. Schedule of values.
3. Contractor's construction schedule (preliminary if not final).
4. Products list (preliminary if not final).
5. Schedule of unit prices.
6. Submittal schedule (preliminary if not final).
7. List of Contractor's staff assignments.
8. List of Contractor's principal consultants.
9. Copies of building permits.
10. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
11. Initial progress report.
12. Report of preconstruction conference.

J. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.

a. Complete administrative actions, submittals, and Work preceding this application, as described in Section 01 7700 "Closeout Procedures."

2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

K. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Certification of completion of final punch list items.
3. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
4. Updated final statement, accounting for final changes to the Contract Sum.
5. AIA Document G706.
6. AIA Document G706A.
7. Evidence that claims have been settled.
8. Final liquidated damages settlement statement.
9. Proof that taxes, fees, and similar obligations are paid.
10. Waivers and releases.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 2900

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SECTION 01 3100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative provisions for coordinating construction operations on Project, including, but not limited to, the following:

1. General coordination procedures.
2. Coordination drawings.
3. RFIs.
4. Digital project management procedures.
5. Project meetings.

B. Related Requirements:

1. Section 01 3200 "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
2. Section 01 7300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
3. Section 01 7700 "Closeout Procedures" for coordinating closeout of the Contract.

1.2 DEFINITIONS

A. BIM: Building Information Modeling.

B. RFI: Request for Information. Request from Owner, Construction Manager, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

1.3 INFORMATIONAL SUBMITTALS

A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:

1. Name, address, telephone number, and email address of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.

B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses, cellular telephone

numbers, and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1. Post copies of list in Project meeting room, in temporary field office, and in prominent location in built facility. Keep list current at all times.

1.4 GENERAL COORDINATION PROCEDURES

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results, where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's construction schedule.
2. Preparation of the schedule of values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.

1.5 REQUEST FOR INFORMATION (RFI)

A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.

1. Architect will return without response those RFIs submitted to Architect by other entities controlled by Contractor.
2. Coordinate and submit RFIs in a prompt manner to avoid delays in Contractor's work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:

1. Project name.
2. Owner name.
3. Owner's Project number.
4. Name of Architect and Construction Manager.
5. Architect's Project number.
6. Date.
7. Name of Contractor.
8. RFI number, numbered sequentially.
9. RFI subject.
10. Specification Section number and title and related paragraphs, as appropriate.
11. Drawing number and detail references, as appropriate.
12. Field dimensions and conditions, as appropriate.
13. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
14. Contractor's signature.
15. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.

    a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.

C. RFI Forms: AIA Document G716 or Software-generated form with substantially the same content as indicated above, acceptable to Architect.

1. Attachments shall be electronic files in PDF format.

D. Architect's and Construction Manager's Action: Architect and Construction Manager will review each RFI, determine action required, and respond. Allow seven days for Architect's response for each RFI. RFIs received by Architect or Construction Manager after 1:00 p.m. will be considered as received the following working day.

1. The following Contractor-generated RFIs will be returned without action:

    a. Requests for approval of submittals.
    b. Requests for approval of substitutions.
    c. Requests for approval of Contractor's means and methods.
    d. Requests for coordination information already indicated in the Contract Documents.
    e. Requests for adjustments in the Contract Time or the Contract Sum.
    f. Requests for interpretation of Architect's actions on submittals.

g. Incomplete RFIs or inaccurately prepared RFIs.

2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt by Architect or Construction Manager of additional information.
3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 01 2600 "Contract Modification Procedures."

a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect and Construction Manager in writing within 5 days of receipt of the RFI response.

E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Include the following:

1. Project name.
2. Name and address of Contractor.
3. Name and address of Architect and Construction Manager.
4. RFI number, including RFIs that were returned without action or withdrawn.
5. RFI description.
6. Date the RFI was submitted.
7. Date Architect's and Construction Manager's response was received.
8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.

F. On receipt of Architect's and Construction Manager's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect and Construction Manager within three days if Contractor disagrees with response.

1.6 DIGITAL PROJECT MANAGEMENT PROCEDURES

A. Use of Architect's Digital Data Files: Digital data files of Architect's CAD drawings will be provided by Architect for Contractor's use during construction.
1. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Contract Drawings.
2. Digital Drawing Software Program: Contract Drawings are available in AutoCAD 2020 .dwg format.
3. Contractor shall execute a data licensing agreement in the form of AIA Document C106 Digital Data Licensing Agreement.
4. The following digital data files will be furnished for each appropriate discipline:

a. Civil engineer’s CAD files for the site (plan view) will be made available for horizontal control and staking and layout.

B. PDF Document Preparation: Where PDFs are required to be submitted to Architect, prepare as follows:

1. Assemble complete submittal package into a single indexed file, incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
2. Name file with submittal number or other unique identifier, including revision identifier.
3. Certifications: Where digitally submitted certificates and certifications are required, provide a digital signature with digital certificate on where indicated.

1.7 PROJECT MEETINGS

A. General: Construction Manager will schedule and conduct meetings and conferences at Project site unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times a minimum of seven days prior to meeting.
2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner, Construction Manager, and Architect, within seven days of the meeting.

B. Preconstruction Conference: Construction Manager will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement.

1. Attendees: Authorized representatives of Owner, Construction Manager, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Discuss items of significance that could affect progress, including the following:

    a. Responsibilities and personnel assignments.
    b. Tentative construction schedule.
    c. Phasing.
    d. Critical work sequencing and long lead items.
    e. Designation of key personnel and their duties.
    f. Lines of communications.
    g. Use of web-based Project software.
    h. Procedures for processing field decisions and Change Orders.
    i. Procedures for RFIs.
    j. Procedures for testing and inspecting.
    k. Procedures for processing Applications for Payment.
    l. Distribution of the Contract Documents.
    m. Submittal procedures.
    n. Preparation of Record Documents.
    o. Use of the premises.
    p. Work restrictions.

q. Working hours.
r. Owner's occupancy requirements.
s. Responsibility for temporary facilities and controls.
t. Procedures for moisture and mold control.
u. Procedures for disruptions and shutdowns.
v. Construction waste management and recycling.
w. Parking availability.
x. Office, work, and storage areas.
y. Equipment deliveries and priorities.
z. First aid.
aa. Security.
bb. Progress cleaning.

3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

C. Project Closeout Conference: Construction Manager will schedule and conduct a project closeout conference, at a time convenient to Owner and Architect, but no later than 15 days prior to the scheduled date of Substantial Completion.

1. Conduct the conference to review requirements and responsibilities related to Project closeout.
2. Attendees: Authorized representatives of Owner, Construction Manager, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:

a. Preparation of Record Documents.
b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
c. Submittal of written warranties.
d. Requirements for completing sustainable design documentation.
e. Requirements for preparing operations and maintenance data.
f. Requirements for delivery of material samples, attic stock, and spare parts.
g. Requirements for demonstration and training.
h. Preparation of Contractor's punch list.
i. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
j. Submittal procedures.
k. Owner's partial occupancy requirements.
l. Installation of Owner's furniture, fixtures, and equipment.
m. Responsibility for removing temporary facilities and controls.

4. Minutes: Entity conducting meeting will record and distribute meeting minutes.

D. Progress Meetings: Construction Manager will conduct progress meetings at weekly intervals.

1. Coordinate dates of meetings with preparation of payment requests.
2. Attendees: In addition to representatives of Owner, Construction Manager, and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

    a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

        1) Review schedule for next period.

    b. Review present and future needs of each entity present, including the following:

        1) Interface requirements.
        2) Sequence of operations.
        3) Status of submittals.
        4) Deliveries.
        5) Off-site fabrication.
        6) Access.
        7) Site use.
        8) Temporary facilities and controls.
        9) Progress cleaning.
        10) Quality and work standards.
        11) Status of correction of deficient items.
        12) Field observations.
        13) Status of RFIs.
        14) Status of Proposal Requests.
        15) Pending changes.
        16) Status of Change Orders.
        17) Pending claims and disputes.
        18) Documentation of information for payment requests.

4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.

a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting, where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 3100

SECTION 01 3200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

1. Startup construction schedule.
2. Contractor's Construction Schedule.
3. Construction schedule updating reports.
4. Daily construction reports.
5. Material location reports.
6. Site condition reports.
7. Unusual event reports.

B. Related Requirements:

1. Section 01 4000 "Quality Requirements" for schedule of tests and inspections.
2. Section 01 2900 "Payment Procedures" for schedule of values and requirements for use of cost-loaded schedule for Applications for Payment.

1.2 DEFINITIONS

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction Project. Activities included in a construction schedule consume time and resources.

1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
2. Predecessor Activity: An activity that precedes another activity in the network.
3. Successor Activity: An activity that follows another activity in the network.

B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine the critical path of Project and when activities can be performed.

C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.

D. Event: The starting or ending point of an activity.

E. Float: The measure of leeway in starting and completing an activity.

1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

F. Resource Loading: The allocation of manpower and equipment necessary for completing an activity as scheduled.

1.3 INFORMATIONAL SUBMITTALS

A. Format for Submittals: Submit required submittals in the following format:
1. PDF file.

B. Startup construction schedule.

C. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.

D. Construction Schedule Updating Reports: Submit with Applications for Payment.

E. Daily Construction Reports: Submit at weekly intervals.

F. Material Location Reports: Submit at weekly intervals.

G. Site Condition Reports: Submit at time of discovery of differing conditions.

H. Unusual Event Reports: Submit at time of unusual event.

1.4 COORDINATION

A. Coordinate Contractor's Construction Schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from entities involved.
2. Coordinate each construction activity in the network with other activities, and schedule them in proper sequence.

1.5 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.

B. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Final Completion.

1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

C. Activities: Treat each floor or separate area as a separate numbered activity for each main element of the Work. Comply with the following:

1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect and Construction Manager.
2. Temporary Facilities: Indicate start and completion dates for the following as applicable:

    a. Securing of approvals and permits required for performance of the Work.
    b. Temporary facilities.
    c. Construction of mock-ups, prototypes and samples.
    d. Owner interfaces and furnishing of items.
    e. Interfaces with Separate Contracts.
    f. Regulatory agency approvals.
    g. Punch list.

3. Procurement Activities: Include procurement process activities for the following long lead-time items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.

4. Submittal Review Time: Include review and resubmittal times indicated in Section 01 3300 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with submittal schedule.
5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's and Construction Manager's administrative procedures necessary for certification of Substantial Completion.
6. Punch List and Final Completion: Include not more than 14 days for completion of punch list items and Final Completion.

D. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.

1. Phasing: Arrange list of activities on schedule by phase.
2. Owner-Furnished Products: Include a separate activity for each product. Include delivery date indicated in Section 01 1000 "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
3. Work Restrictions: Show the effect of the following items on the schedule:

    a. Coordination with existing construction.
    b. Limitations of continued occupancies.
    c. Uninterruptible services.
    d. Partial occupancy before Substantial Completion.

e. Use-of-premises restrictions.
f. Provisions for future construction.
g. Seasonal variations.
h. Environmental control.

E. Cost Correlation: Superimpose a cost correlation timeline, indicating planned and actual costs. On the line, show planned and actual dollar volume of the Work performed as of planned and actual dates used for preparation of payment requests.

1. See Section 01 2900 "Payment Procedures" for cost reporting and payment procedures.

F. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:

1. Unresolved issues.
2. Unanswered Requests for Information.
3. Rejected or unreturned submittals.
4. Notations on returned submittals.
5. Pending modifications affecting the Work and the Contract Time.

G. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
3. As the Work progresses, indicate Final Completion percentage for each activity.

H. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, equipment required to achieve compliance, and date by which recovery will be accomplished.

I. Distribution: Distribute copies of approved schedule to Architect, Construction Manager, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

1. Post copies in Project meeting rooms and temporary field offices.
2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

1.6 GANTT-CHART SCHEDULE REQUIREMENTS

A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal, Gantt-chart-type, Contractor's Construction Schedule within 14 days of date established for the Notice to Proceed.

1. Base schedule on the startup construction schedule and additional information received since the start of Project.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.

1. For construction activities that require three months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.

1.7 REPORTS

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:

1. List of subcontractors at Project site.
2. List of separate contractors at Project site.
3. Approximate count of personnel at Project site.
4. Equipment at Project site.
5. Material deliveries.
6. High and low temperatures and general weather conditions, including presence of rain or snow.
7. Testing and inspection.
8. Accidents.
9. Meetings and significant decisions.
10. Unusual events.
11. Stoppages, delays, shortages, and losses.
12. Meter readings and similar recordings.
13. Emergency procedures.
14. Orders and requests of authorities having jurisdiction.
15. Change Orders received and implemented.
16. Construction Change Directives received and implemented.
17. Services connected and disconnected.
18. Equipment or system tests and startups.
19. Partial completions and occupancies.
20. Substantial Completions authorized.

B. Material Location Reports: At weekly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site. Indicate the following categories for stored materials:

1. Material stored prior to previous report and remaining in storage.
2. Material stored prior to previous report and since removed from storage and installed.
3. Material stored following previous report and remaining in storage.

C. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

D. Unusual Event Reports: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, responses by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

1. Submit unusual event reports directly to Owner within one day of an occurrence. Distribute copies of report to parties affected by the occurrence.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 3200

SECTION 01 3233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

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

1. Preconstruction photographs.
2. Concealed Work photographs.
3. Periodic construction photographs.
4. Final Completion construction photographs.

B. Related Requirements:

1. Section 01 7700 "Closeout Procedures" for submitting photographic documentation as Project Record Documents at Project closeout.
2. Section 01 7900 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.
3. Section 02 4119 "Selective Demolition" for photographic documentation before selective demolition operations commence.
4. Section 31 1000 "Site Clearing" for photographic documentation before site clearing operations commence.

1.3 INFORMATIONAL SUBMITTALS

A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Include same information as corresponding photographic documentation.

B. Digital Photographs: Submit image files within three days of taking photographs.

1. Submit photos on USB thumb-drive or by uploading to web-based file transfer site. Include copy of key plan indicating each photograph's location and direction.
2. Identification: Provide the following information with each image description:

a. Name of Project.
b. Name and contact information for photographer.
c. Name of Architect and Construction Manager.

d. Name of Contractor.
e. Date photograph was taken.
f. Description of location, vantage point, and direction.
g. Unique sequential identifier keyed to accompanying key plan.

1.4 FORMATS AND MEDIA

A. Digital Photographs: Provide color images in JPG format, produced by a digital camera with minimum sensor size of 8 megapixels, and at an image resolution of not less than 3200 by 2400 pixels. Use flash in low light levels or backlit conditions.

B. Digital Images: Submit digital media as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

C. Metadata: Record accurate date and time and GPS location data from camera.

D. File Names: Name media files with date, Project area, and sequential numbering suffix.

1.5 CONSTRUCTION PHOTOGRAPHS

A. General: Take photographs with maximum depth of field and in focus.

1. Maintain key plan with each set of construction photographs that identifies each photographic location.

B. Preconstruction Photographs: Before commencement of the Work, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect or Construction Manager.

1. Flag excavation areas and construction limits before taking construction photographs.
2. Take 20 photographs to show existing conditions adjacent to Area of Work before starting the Work.
3. Take 20 photographs of existing buildings and vertical improvements, to accurately record physical conditions at start of construction.
4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.

C. Concealed Work Photographs: Before proceeding with installing work that will conceal other work, take photographs sufficient in number, with annotated descriptions, to record nature and location of concealed Work, including, but not limited to, the following:

1. Underground utilities.
2. Underslab services.
3. Piping.
4. Electrical conduit.

D. Periodic Construction Photographs: Take 20 photographs weekly. Select vantage points to show status of construction and progress since last photographs were taken.

E. Final Completion Construction Photographs: Take 20 photographs after date of Substantial Completion for submission as Project Record Documents. Architect and Construction Manager will inform photographer of desired vantage points.

F. Additional Photographs: Architect or Construction Manager may request photographs in addition to periodic photographs specified.

1. Three days' notice will be given, where feasible.
2. In emergency situations, take additional photographs within 24 hours of request.
3. Circumstances that could require additional photographs include, but are not limited to, the following:

a. Special events planned at Project site.
b. Immediate follow-up when on-site events result in construction damage or losses.
c. Photographs shall be taken at fabrication locations away from Project site.
d. Substantial Completion of a major phase or component of the Work.
e. Extra record photographs at time of final acceptance.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 3233

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SECTION 01 3300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Submittal schedule requirements.
2. Administrative and procedural requirements for submittals.

B. Related Requirements:

1. Section 01 2900 "Payment Procedures" for submitting Applications for Payment and the schedule of values.
2. Section 01 3100 "Project Management and Coordination" for submitting coordination drawings and subcontract list and for requirements for web-based Project software.
3. Section 01 3200 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
4. Section 01 3233 "Photographic Documentation" for submitting preconstruction photographs, periodic construction photographs, and Final Completion construction photographs.
5. Section 01 4000 "Quality Requirements" for submitting test and inspection reports, and schedule of tests and inspections.
6. Section 01 7700 "Closeout Procedures" for submitting closeout submittals and maintenance material submittals.
7. Section 01 7823 "Operation and Maintenance Data" for submitting operation and maintenance manuals.
8. Section 01 7839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
9. Section 01 7900 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.

1.2 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect's and Construction Manager'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 that do not require Architect's and Construction Manager's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

1.3 SUBMITTAL SCHEDULE

A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and Construction Manager and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.

2. Final Submittal Schedule: Submit concurrently with the first complete submittal of Contractor's construction schedule.

    a. Submit revised submittal schedule as required to reflect changes in current status and timing for submittals.

3. Format: Arrange the following information in a tabular format:

    a. Scheduled date for first submittal.
    b. Specification Section number and title.
    c. Submittal Category: Action; informational.
    d. Name of subcontractor.
    e. Description of the Work covered.
    f. Scheduled date for Architect's and Construction Manager's final release or approval.

1.4 SUBMITTAL FORMATS

A. Submittal Information: Include the following information in each submittal:

1. Project name.
2. Date.
3. Name of Architect.
4. Name of Construction Manager.
5. Name of Contractor.
6. Name of firm or entity that prepared submittal.
7. Names of subcontractor, manufacturer, and supplier.
8. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier and alphanumeric suffix for resubmittals.
9. Category and type of submittal.
10. Submittal purpose and description.
11. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
12. Drawing number and detail references, as appropriate.
13. Indication of full or partial submittal.
14. Location(s) where product is to be installed, as appropriate.
15. Other necessary identification.

16. Remarks.
17. Signature of transmitter.

B. Options: Identify options requiring selection by Architect.

C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Architect and Construction Manager on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.

D. Electronic Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.

1.5 SUBMITTAL PROCEDURES

A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Email: Prepare submittals as PDF package and transmit to Architect by sending via email. Include PDF transmittal form. Include information in email subject line as requested by Architect.

    a. Architect, through Construction Manager, will return annotated file. Annotate and retain one copy of file as a digital Project Record Document file.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
4. Coordinate transmittal of submittals for related parts of the Work specified in different Sections, so processing will not be delayed because of need to review submittals concurrently for coordination.

    a. Architect and Construction Manager reserve the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Construction Manager's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Construction Manager will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 15 days for review of each resubmittal.
4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 days for initial review of each submittal.

5. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architect's consultants, allow 15 days for review of each submittal. Submittal will be returned to Construction Manager, through Architect, before being returned to Contractor.

    a. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect and Construction Manager.

D. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block, and clearly indicate extent of revision.
3. Resubmit submittals until they are marked with approval notation from Architect's and Construction Manager's action stamp.

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

F. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

1.6 SUBMITTAL REQUIREMENTS

A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

    a. Manufacturer's catalog cuts.
    b. Manufacturer's product specifications.
    c. Standard color charts.
    d. Statement of compliance with specified referenced standards.
    e. Testing by recognized testing agency.

f. Application of testing agency labels and seals.
g. Notation of coordination requirements.
h. Availability and delivery time information.

4. For equipment, include the following in addition to the above, as applicable:

a. Wiring diagrams that show factory-installed wiring.
b. Printed performance curves.
c. Operational range diagrams.
d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Submit Product Data before Shop Drawings, and before or concurrently with Samples.

B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

a. Identification of products.
b. Schedules.
c. Compliance with specified standards.
d. Notation of coordination requirements.
e. Notation of dimensions established by field measurement.
f. Relationship and attachment to adjoining construction clearly indicated.
g. Seal and signature of professional engineer if specified.

2. Document Sheet Size: Except for templates, patterns, and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 30 by 42 inches.

C. Samples: Submit Samples for review of type, color, pattern, and texture for a check of these characteristics with other materials.

1. Transmit Samples that contain multiple, related components, such as accessories together in one submittal package.
2. Identification: Permanently attach label on unexposed side of Samples that includes the following:

a. Project name and submittal number.
b. Generic description of Sample.
c. Product name and name of manufacturer.
d. Sample source.
e. Number and title of applicable Specification Section.
f. Specification paragraph number and generic name of each item.

3. Email Transmittal: Provide PDF transmittal. Include digital image file illustrating Sample characteristics and identification information for record.
4. Paper Transmittal: Include paper transmittal with physical samples, including complete submittal information indicated.
5. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

    a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
    b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

6. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units, showing the full range of colors, textures, and patterns available.

    a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect, through Construction Manager, will return submittal with options selected.

7. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

    a. Number of Samples: Submit three sets of Samples. Architect and Construction Manager will retain one Sample set; remainder will be returned. Mark up and retain one returned Sample set as a project record Sample.

        1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
        2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.

2. Manufacturer and product name, and model number if applicable.
3. Number and name of area or space.

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

F. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.

G. Certificates:

1. Certificates and Certifications Submittals: Submit a 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. Provide a notarized signature where indicated.
2. Installer Certificates: Submit written statements on manufacturer's letterhead, certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead, certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
4. Material Certificates: Submit written statements on manufacturer's letterhead, certifying that material complies with requirements in the Contract Documents.
5. Product Certificates: Submit written statements on manufacturer's letterhead, certifying that product complies with requirements in the Contract Documents.
6. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of AWS B2.1/B2.1M on AWS forms. Include names of firms and personnel certified.

H. Test and Research Reports:

1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for substrate preparation and primers required.
2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
4. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed

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

5. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

    a. Name of evaluation organization.
    b. Date of evaluation.
    c. Time period when report is in effect.
    d. Product and manufacturers' names.
    e. Description of product.
    f. Test procedures and results.
    g. Limitations of use.

1.7 CONTRACTOR'S REVIEW

A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect and Construction Manager.

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

    1. Architect and Construction Manager will not review submittals received from Contractor that do not have Contractor's review and approval.

1.8 ARCHITECT'S AND CONSTRUCTION MANAGER'S REVIEW

A. Action Submittals: Architect and Construction Manager will review each submittal, indicate corrections or revisions required, and return.

    1. PDF Submittals: Architect and Construction Manager will indicate, via markup on each submittal, the appropriate action.

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

C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect and Construction Manager.

D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

E. Architect and Construction Manager will discard submittals received from sources other than Contractor.

F. Submittals not required by the Contract Documents will be returned by Architect without action.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 3300

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SECTION 01 4000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

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

B. Testing and inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Specific quality-assurance and quality-control requirements for individual work results are specified in their respective Specification Sections. Requirements in individual Sections may also cover production of standard products.
2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
3. Requirements for Contractor to provide quality-assurance and quality-control services required by Architect, Owner, Construction Manager, or authorities having jurisdiction are not limited by provisions of this Section.

1.2 DEFINITIONS

A. Experienced: When used with an entity or individual, "experienced," unless otherwise further described, means having successfully completed a minimum of five 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 and Inspections: 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.

1. Use of trade-specific terminology in referring to a Work result does not require that certain construction activities specified apply exclusively to specific trade(s).

D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria. Unless otherwise indicated, copies of reports of tests or inspections performed for other than the Project do not meet this definition.

E. Product Tests: Tests and inspections that are performed by a nationally recognized testing laboratory (NRTL) according to 29 CFR 1910.7, by a testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program (NVLAP), or by a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

F. Source Quality-Control Tests and Inspections: Tests and inspections that are performed at the source (e.g., plant, mill, factory, or shop).

G. Testing Agency: An entity engaged to perform specific tests, inspections, or both. The term "testing laboratory" has the same meaning as the term "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 or Construction Manager.

1.3 CONFLICTING REQUIREMENTS

A. Conflicting Standards and Other Requirements: If compliance with two or more standards or requirements is specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, inform the Architect regarding the conflict and obtain clarification prior to proceeding with the Work. Refer conflicting requirements that are different, but apparently equal, to Architect for clarification before proceeding.

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

1.4 INFORMATIONAL SUBMITTALS

A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.

B. Qualification Data: For Contractor's quality-control personnel.

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

D. Schedule of Tests and Inspections: Prepare in tabular form and include the following:

1. Specification Section number and title.
2. Entity responsible for performing tests and inspections.
3. Description of test and inspection.
4. Identification of applicable standards.
5. Identification of test and inspection methods.
6. Number of tests and inspections required.
7. Time schedule or time span for tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

E. Reports: Prepare and submit certified written reports and documents as specified.

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

1.5 CONTRACTOR'S QUALITY-CONTROL PLAN

A. Quality-Control Plan, General: Submit quality-control plan within 10 days of Notice to Proceed, and not less than five days prior to preconstruction conference. Submit in format acceptable to Architect. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities and to coordinate Owner's quality-assurance and quality-control activities. Coordinate with Contractor's Construction Schedule.

B. Quality-Control Personnel Qualifications: Engage qualified personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.

1. Project quality-control manager may also serve as Project superintendent.

C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.

D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:

1. Contractor-performed tests and inspections, including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections. Distinguish source quality-control tests and inspections from field quality-control tests and inspections.
2. Special inspections required by authorities having jurisdiction and indicated on the Statement of Special Inspections.

3. Owner-performed tests and inspections indicated in the Contract Documents.

E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring the Work into compliance with standards of workmanship established by Contract requirements and approved mockups.

F. Monitoring and Documentation: Maintain testing and inspection reports, including log of approved and rejected results. Include Work Architect has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming Work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.6 REPORTS AND DOCUMENTS

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

1. Date of issue.
2. Project title and number.
3. Name, address, telephone number, and email address 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 inspection.
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 reinspecting.

B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, telephone number, and email address of technical representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Statement that products at Project site comply with requirements.
4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
6. Statement of whether conditions, products, and installation will affect warranty.

7. Other required items indicated in individual Specification Sections.

C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, telephone number, and email address of factory-authorized service representative making report.
2. Statement that equipment complies with requirements.
3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
4. Statement of whether conditions, products, and installation will affect warranty.
5. Other required items indicated in individual Specification Sections.

1.7 QUALITY ASSURANCE

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

B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units. As applicable, procure products from manufacturers able to meet qualification requirements, warranty requirements, and technical or factory-authorized service representative requirements.

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

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

E. Testing and Inspecting Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspection indicated, as documented in accordance with ASTM E329, and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.

F. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

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

1.8 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspection they are engaged to perform.

2. Costs for retesting and reinspecting construction that replaces or is necessitated by Work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.

B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities, whether specified or not, to verify and document that the Work complies with requirements.

1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
2. Engage a qualified testing agency to perform quality-control services.

    a. Contractor will not employ same entity engaged by Owner, unless agreed to in writing by Owner.

3. Notify testing agencies at least 48 hours in advance of time when Work that requires testing or inspection will be performed; notify through the Project Inspector.
4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
5. Testing and inspection requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

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

D. Testing Agency Responsibilities: Cooperate with Architect, Construction Manager, and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Architect, Construction Manager, and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the locations from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections, and state in each report whether tested and inspected Work complies with or deviates from requirements.

4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
6. Do not perform duties of Contractor.

E. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 01 3300 "Submittal Procedures."

F. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.

G. Contractor's Associated Requirements and Services: Cooperate with agencies and representatives performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspection. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspection equipment at Project site.

H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspection.

1.9 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Owner will engage a qualified testing agency and/or special inspector to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, and as follows:

1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures, and reviewing the completeness and adequacy of those procedures to perform the Work.
2. Notifying Architect, Construction Manager, and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.

3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect, through Construction Manager, with copy to Contractor and to authorities having jurisdiction.
4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
5. Interpreting tests and inspections, and stating in each report whether tested and inspected Work complies with or deviates from the Contract Documents.
6. Retesting and reinspecting corrected Work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Architect.
4. Identification of testing agency or special inspector conducting test or inspection.

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

1. Submit log at Project closeout as part of Project Record Documents.

3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspection, 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. 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 7300 "Execution."

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

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

END OF SECTION 01 4000

SECTION 01 4200 - REFERENCES

PART 1 - GENERAL

1.1 DEFINITIONS

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

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

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

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

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

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

G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.

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

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

1.2 INDUSTRY STANDARDS

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

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

1. For standards referenced by applicable building codes, comply with dates of standards as listed in building codes.

C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.3 ABBREVIATIONS AND ACRONYMS

A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Abbreviations and acronyms not included in this list shall mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States." The information in this list is subject to change and is believed to be accurate as of the date of the Contract Documents.

1. AABC - Associated Air Balance Council; www.aabc.com.
2. AAMA - American Architectural Manufacturers Association; (See FGIA).
3. AAPFCO - Association of American Plant Food Control Officials; www.aapfco.org.
4. AASHTO - American Association of State Highway and Transportation Officials; www.transportation.org.
5. AATCC - American Association of Textile Chemists and Colorists; www.aatcc.org.
6. ABMA - American Bearing Manufacturers Association; www.americanbearings.org.
7. ABMA - American Boiler Manufacturers Association; www.abma.com.
8. ACI - American Concrete Institute; (Formerly: ACI International); www.concrete.org.
9. ACPA - American Concrete Pipe Association; www.concrete-pipe.org.
10. AEIC - Association of Edison Illuminating Companies, Inc. (The); www.aeic.org.
11. AF&PA - American Forest & Paper Association; www.afandpa.org.
12. AGA - American Gas Association; www.aga.org.
13. AHAM - Association of Home Appliance Manufacturers; www.aham.org.
14. AHRI - Air-Conditioning, Heating, and Refrigeration Institute (The); www.ahrinet.org.
15. AI - Asphalt Institute; www.asphaltinstitute.org.
16. AIA - American Institute of Architects (The); www.aia.org.
17. AISC - American Institute of Steel Construction; www.aisc.org.
18. AISI - American Iron and Steel Institute; www.steel.org.
19. AITC - American Institute of Timber Construction; www.plib.org.
20. AMCA - Air Movement and Control Association International, Inc.; www.amca.org.
21. ANSI - American National Standards Institute; www.ansi.org.
22. AOSA - Association of Official Seed Analysts, Inc.; www.aosaseed.com.
23. APA - APA - The Engineered Wood Association; www.apawood.org.
24. APA - Architectural Precast Association; www.archprecast.org.
25. API - American Petroleum Institute; www.api.org.

26. ARI - Air-Conditioning & Refrigeration Institute; (See AHRI).
27. ARI - American Refrigeration Institute; (See AHRI).
28. ARMA - Asphalt Roofing Manufacturers Association; www.asphaltroofing.org.
29. ASCE - American Society of Civil Engineers; www.asce.org.
30. ASCE/SEI - American Society of Civil Engineers/Structural Engineering Institute; (See ASCE).
31. ASHRAE - American Society of Heating, Refrigerating and Air-Conditioning Engineers; www.ashrae.org.
32. ASME - ASME International; (American Society of Mechanical Engineers); www.asme.org.
33. ASSE - American Society of Sanitary Engineering; www.asse-plumbing.org.
34. ASSP - American Society of Safety Professionals (The); www.assp.org.
35. ASTM - ASTM International; www.astm.org.
36. ATIS - Alliance for Telecommunications Industry Solutions; www.atis.org.
37. AVIXA - Audiovisual and Integrated Experience Association; (Formerly: Infocomm International); www.avixa.org.
38. AWEA - American Wind Energy Association; www.awea.org.
39. AWI - Architectural Woodwork Institute; www.awinet.org.
40. AWMAC - Architectural Woodwork Manufacturers Association of Canada; www.awmac.com.
41. AWPA - American Wood Protection Association; www.awpa.com.
42. AWS - American Welding Society; www.aws.org.
43. AWWA - American Water Works Association; www.awwa.org.
44. BHMA - Builders Hardware Manufacturers Association; www.buildershardware.com.
45. BIA - Brick Industry Association (The); www.gobrick.com.
46. BICSI - BICSI, Inc.; www.bicsi.org.
47. BIFMA - BIFMA International; (Business and Institutional Furniture Manufacturer's Association); www.bifma.org.
48. BISSC - Baking Industry Sanitation Standards Committee; www.bissc.org.
49. BWF - Badminton World Federation; (Formerly: International Badminton Federation); www.bissc.org.
50. CDA - Copper Development Association; www.copper.org.
51. CE - Conformite Europeenne; www.ec.europa.eu/growth/single-market/ce-marking.
52. CEA - Canadian Electricity Association; www.electricity.ca.
53. CFFA - Chemical Fabrics and Film Association, Inc.; www.chemicalfabricsandfilm.com.
54. CFSEI - Cold-Formed Steel Engineers Institute; www.cfsei.org.
55. CGA - Compressed Gas Association; www.cganet.com.
56. CIMA - Cellulose Insulation Manufacturers Association; www.cellulose.org.
57. CISCA - Ceilings & Interior Systems Construction Association; www.cisca.org.
58. CISPI - Cast Iron Soil Pipe Institute; www.cispi.org.
59. CLFMI - Chain Link Fence Manufacturers Institute; www.chainlinkinfo.org.
60. CPA - Composite Panel Association; www.compositepanel.org.
61. CRI - Carpet and Rug Institute (The); www.carpet-rug.org.
62. CRRC - Cool Roof Rating Council; www.coolroofs.org.
63. CRSI - Concrete Reinforcing Steel Institute; www.crsi.org.
64. CSA - CSA Group; www.csa-group.org.
65. CSI - Cast Stone Institute; www.caststone.org.
66. CSI - Construction Specifications Institute (The); www.csiresources.org.

67. CSSB - Cedar Shake & Shingle Bureau; www.cedarbureau.org.
68. CTA - Consumer Technology Association; www.cta.tech.
69. CTI - Cooling Technology Institute; (Formerly: Cooling Tower Institute); www.coolingtechnology.org.
70. CWC - Composite Wood Council; (See CPA).
71. DASMA - Door and Access Systems Manufacturers Association; www.dasma.com.
72. DHA - Decorative Hardwoods Association; (Formerly: Hardwood Plywood & Veneer Association); www.decorativehardwoods.org.
73. DHI - Door and Hardware Institute; www.dhi.org.
74. ECA - Electronic Components Association; (See ECIA).
75. ECAMA - Electronic Components Assemblies & Materials Association; (See ECIA).
76. ECIA - Electronic Components Industry Association; www.ecianow.org.
77. EIA - Electronic Industries Alliance; (See TIA).
78. EIMA - EIFS Industry Members Association; www.eima.com.
79. EJMA - Expansion Joint Manufacturers Association, Inc.; www.ejma.org.
80. EOS/ESD Association; (Electrostatic Discharge Association); www.esda.org.
81. ESTA - Entertainment Services and Technology Association; (See PLASA).
82. ETL - Intertek (See Intertek); www.intertek.com.
83. EVO - Efficiency Valuation Organization; www.evo-world.org.
84. FCI - Fluid Controls Institute; www.fluidcontrolsinstitute.org.
85. FGIA - Fenestration and Glazing Industry Alliance; https://fgiaonline.org.
86. FIBA - Federation Internationale de Basketball; (The International Basketball Federation); www.fiba.com.
87. FIVB - Federation Internationale de Volleyball; (The International Volleyball Federation); www.fivb.org.
88. FM Approvals - FM Approvals LLC; www.fmapprovals.com.
89. FM Global - FM Global; (Formerly: FMG - FM Global); www.fmglobal.com.
90. FRSA - Florida Roofing, Sheet Metal Contractors Association, Inc.; www.floridaroof.com.
91. FSA - Fluid Sealing Association; www.fluidsealing.com.
92. FSC - Forest Stewardship Council U.S.; www.fscus.org.
93. GA - Gypsum Association; www.gypsum.org.
94. GANA - Glass Association of North America; (See NGA).
95. GS - Green Seal; www.greenseal.org.
96. HI - Hydraulic Institute; www.pumps.org.
97. HI/GAMA - Hydronics Institute/Gas Appliance Manufacturers Association; (See AHRI).
98. HMMA - Hollow Metal Manufacturers Association; (See NAAMM).
99. HPVA - Hardwood Plywood & Veneer Association; (See DHA).
100. IAPSC - International Association of Professional Security Consultants; www.iapsc.org.
101. IAS - International Accreditation Service; www.iasonline.org.
102. ICBO - International Conference of Building Officials; (See ICC).
103. ICC - International Code Council; www.iccsafe.org.
104. ICEA - Insulated Cable Engineers Association, Inc.; www.icea.net.
105. ICPA - International Cast Polymer Association; www.theicpa.com.
106. ICRI - International Concrete Repair Institute, Inc.; www.icri.org.
107. IEC - International Electrotechnical Commission; www.iec.ch.
108. IEEE - Institute of Electrical and Electronics Engineers, Inc. (The); www.ieee.org.

109. IES - Illuminating Engineering Society; (Formerly: Illuminating Engineering Society of North America); www.ies.org.
110. IESNA - Illuminating Engineering Society of North America; (See IES).
111. IEST - Institute of Environmental Sciences and Technology; www.iest.org.
112. IGMA - Insulating Glass Manufacturers Alliance; (See FGIA).
113. IGSHPA - International Ground Source Heat Pump Association; www.igshpa.org.
114. II - Infocomm International; (See AVIXA).
115. ILI - Indiana Limestone Institute of America, Inc.; www.iliai.com.
116. Intertek - Intertek Group; (Formerly: ETL SEMCO; Intertek Testing Service NA); www.intertek.com.
117. ISA - International Society of Automation (The); (Formerly: Instrumentation, Systems, and Automation Society); www.isa.org.
118. ISAS - Instrumentation, Systems, and Automation Society (The); (See ISA).
119. ISFA - International Surface Fabricators Association; (Formerly: International Solid Surface Fabricators Association); www.isfanow.org.
120. ISO - International Organization for Standardization; www.iso.org.
121. ISSFA - International Solid Surface Fabricators Association; (See ISFA).
122. ITU - International Telecommunication Union; www.itu.int.
123. KCMA - Kitchen Cabinet Manufacturers Association; www.kcma.org.
124. LMA - Laminating Materials Association; (See CPA).
125. LPI - Lightning Protection Institute; www.lightning.org.
126. MBMA - Metal Building Manufacturers Association; www.mbma.com.
127. MCA - Metal Construction Association; www.metalconstruction.org.
128. MFMA - Maple Flooring Manufacturers Association, Inc.; www.maplefloor.org.
129. MFMA - Metal Framing Manufacturers Association, Inc.; www.metalframingmfg.org.
130. MHI - Material Handling Industry; www.mhi.org.
131. MIA - Marble Institute of America; (See NSI).
132. MMPA - Moulding & Millwork Producers Association; www.wmmpa.com.
133. MPI - Master Painters Institute; www.paintinfo.com.
134. MSS - Manufacturers Standardization Society of The Valve and Fittings Industry Inc.; www.mss-hq.org.
135. NAAMM - National Association of Architectural Metal Manufacturers; www.naamm.org.
136. NACE - NACE International; (National Association of Corrosion Engineers International); www.nace.org.
137. NADCA - National Air Duct Cleaners Association; www.nadca.com.
138. NAIMA - North American Insulation Manufacturers Association; www.naima.org.
139. NALP - National Association of Landscape Professionals; www.landscapeprofessionals.org.
140. NBGQA - National Building Granite Quarries Association, Inc.; www.nbgqa.com.
141. NBI - New Buildings Institute; www.newbuildings.org.
142. NCAA - National Collegiate Athletic Association (The); www.ncaa.org.
143. NCMA - National Concrete Masonry Association; www.ncma.org.
144. NEBB - National Environmental Balancing Bureau; www.nebb.org.
145. NECA - National Electrical Contractors Association; www.necanet.org.
146. NeLMA - Northeastern Lumber Manufacturers Association; www.nelma.org.
147. NEMA - National Electrical Manufacturers Association; www.nema.org.
148. NETA - InterNational Electrical Testing Association; www.netaworld.org.

149. NFHS - National Federation of State High School Associations; www.nfhs.org.
150. NFPA - National Fire Protection Association; www.nfpa.org.
151. NFPA - NFPA International; (See NFPA).
152. NFRC - National Fenestration Rating Council; www.nfrc.org.
153. NGA - National Glass Association (The); (Formerly: Glass Association of North America); www.glass.org.
154. NHLA - National Hardwood Lumber Association; www.nhla.com.
155. NLGA - National Lumber Grades Authority; www.nlga.org.
156. NOFMA - National Oak Flooring Manufacturers Association; (See NWFA).
157. NOMMA - National Ornamental & Miscellaneous Metals Association; www.nomma.org.
158. NRCA - National Roofing Contractors Association; www.nrca.net.
159. NRMCA - National Ready Mixed Concrete Association; www.nrmca.org.
160. NSF - NSF International; www.nsf.org.
161. NSI - National Stone Institute; (Formerly: Marble Institute of America); www.naturalstoneinstitute.org.
162. NSPE - National Society of Professional Engineers; www.nspe.org.
163. NSSGA - National Stone, Sand & Gravel Association; www.nssga.org.
164. NTMA - National Terrazzo & Mosaic Association, Inc. (The); www.ntma.com.
165. NWFA - National Wood Flooring Association; www.nwfa.org.
166. NWRA - National Waste & Recycling Association; www.wasterecycling.org
167. PCI - Precast/Prestressed Concrete Institute; www.pci.org.
168. PDI - Plumbing & Drainage Institute; www.pdionline.org.
169. PLASA - PLASA; (Formerly: ESTA - Entertainment Services and Technology Association); www.plasa.org.
170. RCSC - Research Council on Structural Connections; www.boltcouncil.org.
171. RFCI - Resilient Floor Covering Institute; www.rfci.com.
172. RIS - Redwood Inspection Service; www.redwoodinspection.com.
173. SAE - SAE International; www.sae.org.
174. SCTE - Society of Cable Telecommunications Engineers; www.scte.org.
175. SDI - Steel Deck Institute; www.sdi.org.
176. SDI - Steel Door Institute; www.steeldoor.org.
177. SEFA - Scientific Equipment and Furniture Association (The); www.sefalabs.com.
178. SEI/ASCE - Structural Engineering Institute/American Society of Civil Engineers; (See ASCE).
179. SIA - Security Industry Association; www.siaonline.org.
180. SJI - Steel Joist Institute; www.steeljoist.org.
181. SMA - Screen Manufacturers Association; www.smainfo.org.
182. SMACNA - Sheet Metal and Air Conditioning Contractors' National Association; www.smacna.org.
183. SMPTE - Society of Motion Picture and Television Engineers; www.smpte.org.
184. SPFA - Spray Polyurethane Foam Alliance; www.sprayfoam.org.
185. SPIB - Southern Pine Inspection Bureau; www.spib.org.
186. SPRI - Single Ply Roofing Industry; www.spri.org.
187. SRCC - Solar Rating & Certification Corporation; www.solar-rating.org.
188. SSINA - Specialty Steel Industry of North America; www.ssina.com.
189. SSPC - SSPC: The Society for Protective Coatings; www.sspc.org.
190. STI - Steel Tank Institute; www.steeltank.com.

191. SWI - Steel Window Institute; www.steelwindows.com.
192. SWPA - Submersible Wastewater Pump Association; www.swpa.org.
193. TCA - Tilt-Up Concrete Association; www.tilt-up.org.
194. TCNA - Tile Council of North America, Inc.; www.tileusa.com.
195. TEMA - Tubular Exchanger Manufacturers Association, Inc.; www.tema.org.
196. TIA - Telecommunications Industry Association (The); (Formerly: TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance); www.tiaonline.org.
197. TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance; (See TIA).
198. TMS - The Masonry Society; www.masonrysociety.org.
199. TPI - Truss Plate Institute; www.tpinst.org.
200. TPI - Turfgrass Producers International; www.turfgrasssod.org.
201. TRI - Tile Roofing Institute; www.tileroofing.org.
202. UL - Underwriters Laboratories Inc.; www.ul.com.
203. UL LLC - UL LLC; www.ul.com.
204. UNI - Uni-Bell PVC Pipe Association; www.uni-bell.org.
205. USAV - USA Volleyball; www.usavolleyball.org.
206. USGBC - U.S. Green Building Council; www.usgbc.org.
207. USITT - United States Institute for Theatre Technology, Inc.; www.usitt.org.
208. WA - Wallcoverings Association; www.wallcoverings.org.
209. WCLIB - West Coast Lumber Inspection Bureau; www.wclib.org.
210. WCMA - Window Covering Manufacturers Association; www.wcmanet.org.
211. WDMA - Window & Door Manufacturers Association; www.wdma.com.
212. WI - Woodwork Institute; www.wicnet.org.
213. WSRCA - Western States Roofing Contractors Association; www.wsrca.com.
214. WWPA - Western Wood Products Association; www.wwpa.org.

B. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is believed to be accurate as of the date of the Contract Documents.

1. DIN - Deutsches Institut fur Normung e.V.; www.din.de.
2. IAPMO - International Association of Plumbing and Mechanical Officials; www.iapmo.org.
3. ICC - International Code Council; www.iccsafe.org.
4. ICC-ES - ICC Evaluation Service, LLC; www.icc-es.org.

C. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Information is subject to change and is up to date as of the date of the Contract Documents.

1. COE - Army Corps of Engineers; www.usace.army.mil.
2. CPSC - Consumer Product Safety Commission; www.cpsc.gov.
3. DOC - Department of Commerce; National Institute of Standards and Technology; www.nist.gov.
4. DOD - Department of Defense; www.quicksearch.dla.mil.
5. DOE - Department of Energy; www.energy.gov.

6. EPA - Environmental Protection Agency; www.epa.gov.
7. FAA - Federal Aviation Administration; www.faa.gov.
8. FG - Federal Government Publications; www.gpo.gov/fdsys.
9. GSA - General Services Administration; www.gsa.gov.
10. HUD - Department of Housing and Urban Development; www.hud.gov.
11. LBL - Lawrence Berkeley National Laboratory; Environmental Energy Technologies Division; www.eetd.lbl.gov.
12. OSHA - Occupational Safety & Health Administration; www.osha.gov.
13. SD - Department of State; www.state.gov.
14. TRB - Transportation Research Board; National Cooperative Highway Research Program; The National Academies; www.trb.org.
15. USDA - Department of Agriculture; Agriculture Research Service; U.S. Salinity Laboratory; www.ars.usda.gov.
16. USDA - Department of Agriculture; Rural Utilities Service; www.usda.gov.
17. USDOJ - Department of Justice; Office of Justice Programs; National Institute of Justice; www.ojp.usdoj.gov.
18. USP - U.S. Pharmacopeial Convention; www.usp.org.
19. USPS - United States Postal Service; www.usps.com.

D. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.

1. CFR - Code of Federal Regulations; Available from Government Printing Office; www.govinfo.gov.
2. DOD - Department of Defense; Military Specifications and Standards; Available from DLA Document Services; www.quicksearch.dla.mil.
3. DSCC - Defense Supply Center Columbus; (See FS).
4. FED-STD - Federal Standard; (See FS).
5. FS - Federal Specification; Available from DLA Document Services; www.quicksearch.dla.mil.

    a. Available from Defense Standardization Program; www.dsp.dla.mil.
    b. Available from General Services Administration; www.gsa.gov.
    c. Available from National Institute of Building Sciences/Whole Building Design Guide; www.wbdg.org.

6. MILSPEC - Military Specification and Standards; (See DOD).
7. USAB - United States Access Board; www.access-board.gov.
8. USATBCB - U.S. Architectural & Transportation Barriers Compliance Board; (See USAB).

E. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.

1. CBHF; State of California; Department of Consumer Affairs; Bureau of Electronic and Appliance Repair, Home Furnishings and Thermal Insulation; www.bearhfti.ca.gov.
2. CCR; California Code of Regulations; Office of Administrative Law; California Title 24 Energy Code; www.calregs.com.
3. CDHS; California Department of Health Services; (See CDPH).
4. CDPH; California Department of Public Health; Indoor Air Quality Program; www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/Main-Page.aspx.
5. CPUC; California Public Utilities Commission; www.cpuc.ca.gov.
6. SCAQMD; South Coast Air Quality Management District; www.aqmd.gov.
7. TFS; Texas A&M Forest Service; Sustainable Forestry and Economic Development; www.txforestservice.tamu.edu.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 4200

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SECTION 01 5000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

B. Related Requirements:

1. Section 01 1000 "Summary" for work restrictions and limitations on utility interruptions.

1.2 USE CHARGES

A. Installation, removal, and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities engaged in the Project to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Architect, testing agencies, and authorities having jurisdiction.

B. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

C. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.3 INFORMATIONAL SUBMITTALS

A. Site Utilization Plan: Show temporary facilities, temporary utility lines and connections, staging areas, construction site entrances, vehicle circulation, and parking areas for construction personnel.

B. Implementation and Termination Schedule: Within 15 days of date established for commencement of the Work, submit schedule indicating implementation and termination dates of each temporary utility.

C. Project Identification and Temporary Signs: Show fabrication and installation details, including plans, elevations, details, layouts, typestyles, graphic elements, and message content.

D. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.

E. Noise and Vibration Control Plan: Identify construction activities that may impact the occupancy and use of existing spaces within the building or adjacent existing buildings, whether occupied by others, or occupied by the Owner. Include the following:

1. Methods used to meet the goals and requirements of the Owner.
2. Concrete cutting method(s) to be used.
3. Location of construction devices on the site.
4. Show compliance with the use and maintenance of quieted construction devices for the duration of the Project.
5. Indicate activities that may disturb building occupants and that are planned to be performed during non-standard working hours as coordinated with the Owner.
6. Indicate locations of sensitive student areas or other areas requiring special attention as identified by Owner. Indicate means for complying with Owner's requirements.

1.4 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

C. Accessible Temporary Egress: Comply with applicable provisions in the United States Access Board's ADA-ABA Accessibility Guidelines, CBC Chapter 11B, and ICC/ANSI A117.1.

1.5 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Portable Chain-Link Fencing: Minimum 2-inch, 0.148-inch-thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch-OD line posts and 2-7/8-inch-OD corner and pull posts, with 1-5/8-inch-OD top and bottom rails. Provide galvanized-steel bases for supporting posts.

B. Fencing Windscreen Privacy Screen: Polyester fabric scrim with grommets for attachment to chain-link fence, sized to height of fence, in color selected by Architect from manufacturer's standard colors.

2.2 TEMPORARY FACILITIES

A. Field Offices: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

B. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

1. Store combustible materials apart from building.

2.3 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

PART 3 - EXECUTION

3.1 TEMPORARY FACILITIES, GENERAL

A. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

3.2 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

1. Locate facilities to limit site disturbance as specified in Section 01 1000 "Summary."

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.3 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.

1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

C. Sanitary Facilities: Provide temporary toilets, wash facilities, safety shower and eyewash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

1. Use of Permanent Toilets: Use of Owner's existing or new toilet facilities is not permitted.

D. Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.

E. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

3.4 SUPPORT FACILITIES INSTALLATION

A. Comply with the following:

1. Provide construction for temporary field offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible in accordance with ASTM E136. Comply with NFPA 241.
2. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas within construction limits indicated on Drawings.

1. Provide dust-control treatment that is nonpolluting and non-tracking. Reapply treatment as required to minimize dust.

C. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain, including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

D. Parking: Use designated areas of Owner's existing parking areas for construction personnel.

E. Storage and Staging: Use designated areas of Project site for storage and staging needs.

F. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.

1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
2. Remove snow and ice as required to minimize accumulations.

G. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.

1. Identification Signs: Provide Project identification signs as indicated on Drawings.
2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.

a. Provide temporary, directional signs for construction personnel and visitors.

3. Maintain and touch up signs, so they are legible at all times.

H. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 01 7300 "Execution."

I. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

1. Where access to adjacent properties is required in order to affect protection of existing facilities, obtain written permission from adjacent property owner to access property for that purpose.

B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

1. Comply with work restrictions specified in Section 01 1000 "Summary."

C. Temporary Erosion and Sedimentation Control: Comply with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent and requirements specified in Section 31 1000 "Site Clearing."

D. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent

properties and walkways, according to erosion- and sedimentation-control Drawings and requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.

1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant-protection zones.
2. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
3. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from Project site during the course of Project.
4. Remove erosion and sedimentation controls, and restore and stabilize areas disturbed during removal.

E. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.

F. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

G. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals, so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using materials approved by authorities having jurisdiction.

H. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people from easily entering site except by entrance gates.

1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Furnish one set of keys to Owner.

I. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each workday.

J. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

K. Temporary Egress: Provide temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction. Provide signage directing occupants to temporary egress.

L. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.

1. Prohibit smoking in construction areas. Comply with additional limits on smoking specified in other Sections.
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition in accordance with requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign, stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.6 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 01 7700 "Closeout Procedures."

END OF SECTION 01 5000

SECTION 01 5100 - FIELD ENGINEERING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Provide materials, equipment, and transportation and perform labor as required for construction surveying.

1.02 RELATED DOCUMENTS

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

1.03 RELATED WORK SPECIFIED ELSEWHERE

A. Section 312000: Site Grading

B. Section 033100: Water & Sewer Piped Utilities

C. Section 334100: Storm Drainage

D. Section 321216: Asphalt Concrete Paving

E. Section 321313: Site Concrete

1.04 STANDARD SPECIFICATIONS

A. Construction materials and methods shall be in accordance with the *Standard Specifications for Public Works Construction, 2021 edition (SSPWC)*, published by Building News, Inc., except as modified or otherwise specified herein (hereinafter the Standard Specifications).

B. In case of conflict between the Standard Specifications and the project specifications, the project specifications shall govern.

1.05 REGULATORY REQUIREMENTS

A. Construction shall comply with the *California Code of Regulations, Title 24, Part 2* (the *California Building Code*), most recent effective edition.

B. Construction shall comply with applicable health and safety laws and standards including rules, orders and regulations of the *State of California Construction and General Industry Safety Orders*, the *Occupational Safety and Health Act of 1970*, and the *Construction Safety Act*.

1.06 SUBMITTALS

A. Provide submittals according to the Conditions of the Contract and Division 1 “Submittal Procedures” section.

B. Refer to “Submittal Requirements and Schedule” at the end of this Section.

1.07 RECORD DOCUMENTS

A. Comply with requirements of Division 1, “Project Record Documents” section.

1.08 QUALITY ASSURANCE

A. Retain a Land Surveyor, registered in the State of California, and acceptable to Architect / Engineer and Owner.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

3.01 SURVEY CONTROL

A. Confirm location, condition, datum, horizontal and vertical control data for survey control points given on the Drawings, with the Topographic Mapping Surveyor.

1. Protect survey control points during construction.

B. Establish additional survey control points throughout the work site in locations that will not be disturbed by construction activities.

1. Locate control points such that there are at least two readily useable for each individual work area requiring surveying.

2. Record locations of control points on Record Documents, including description and horizontal and vertical survey data.

C. Survey horizontal and vertical locations of existing buried conduits, pipelines and structures to be joined by, or which may conflict with, new construction and which have been exposed by potholing pursuant to requirements of individual technical specification sections; while exposed, observe and record conduit / pipe size and material. Redline this information to scale on a hardcopy of the applicable plan (or plan and profile) and provide to the Engineer for review and resolution of conflicts, if any. Allow a minimum of five (5) working days for review; more time may be required depending on the completeness of information provided and on the extent of the conflicts.

D. Layout and provide construction stakes for the work, including:

1. Line and grade control for rough grading operations, including area grading, cut and fill slopes, subgrade for building pads and pavements.

2. Line and grade control for finish grading including drainage swales.

3. Line and grade control and grade certification prior to backfill for gravity pipelines and related structures.

4. Where called for on the Drawings, grade control and grade certification prior to backfill for pressure pipelines.

5. Line and grade control for concrete flatwork, walks, ramps, stairs, curbs, gutters, and walls.

6. Line and grade control for A.C. and concrete pavements.

E. Survey and certify finish surface of completed building pad prior to any work involving plumbing, utilities, or foundations.

F. Survey forms for concrete walks and ramps prior to ordering concrete to ensure that accessibility requirements for slope and cross-slope will be conformed with.

G. Where design longitudinal gradient is less than 1% (1/8 inch per foot) survey gutter or curb and gutter forms prior to ordering concrete to ensure that design slope is being achieved.

H. For asphalt concrete and concrete pavement, prior to scheduling placement of pavement confirm that surface of aggregate base course has been constructed to the design elevation and slope within tolerances specified in Section 02310, Subsection 3.03B.

I. Provide record surveying pursuant to requirements of individual technical specification sections.

END OF SECTION

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SECTION 01 6000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

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

B. Related Requirements:

1. Section 01 1000 "Summary" for Contractor requirements related to Owner-furnished products.
2. Section 01 2300 "Alternates" for products selected under an alternate.
3. Section 01 2500 "Substitution Procedures" for requests for substitutions.
4. Section 01 4200 "References" for applicable industry standards for products specified.
5. Section 01770 "Closeout Procedures" for submitting warranties.

1.2 DEFINITIONS

A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
2. New Products: Items that have not previously been incorporated into another project or facility. Salvaged items or items reused from other projects are not considered new products. Items that are manufactured or fabricated to include recycled content materials are considered new products, unless indicated otherwise.
3. Comparable Product: Product by named manufacturer that is demonstrated and approved through the comparable product submittal process described in Part 2 "Comparable Products" Article, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Basis-of-Design Product Specification: A specification in which a single manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation. Published attributes and characteristics of basis-of-design product establish salient characteristics of products.

1. Evaluation of Comparable Products: In addition to the basis-of-design product description, product attributes and characteristics may be listed to establish the significant qualities related to type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other special features and requirements for purposes of evaluating comparable products of additional manufacturers named in the specification. Manufacturer's published attributes and characteristics of basis-of-design product also establish salient characteristics of products for purposes of evaluating comparable products.

C. Subject to Compliance with Requirements: Where the phrase "Subject to compliance with requirements" introduces a product selection procedure in an individual Specification Section, provide products qualified under the specified product procedure. In the event that a named product or product by a named manufacturer does not meet the other requirements of the specifications, select another named product or product from another named manufacturer that does meet the requirements of the specifications; submit a comparable product request or substitution request, if applicable.

D. Comparable Product Request Submittal: An action submittal requesting consideration of a comparable product, including the following information:

1. Identification of basis-of-design product or fabrication or installation method to be replaced, including Specification Section number and title and Drawing numbers and titles.
2. Data indicating compliance with the requirements specified in Part 2 "Comparable Products" Article.

E. Basis-of-Design Product Specification Submittal: An action submittal complying with requirements in Section 01 3300 "Submittal Procedures."

F. Substitution: Refer to Section 01 2500 "Substitution Procedures" for definition and limitations on substitutions.

1.3 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

B. Identification of Products: Except for required labels and operating data, do not attach or imprint manufacturer or product names or trademarks on exposed surfaces of products or equipment that will be exposed to view in occupied spaces or on the exterior.

1. Labels: Locate required product labels and stamps on a concealed surface, or, where required for observation following installation, on a visually accessible surface that is not conspicuous.
2. Equipment Nameplates: Provide a permanent nameplate on each item of service- or power-operated equipment. Locate on a visually accessible but inconspicuous surface. Include information essential for operation, including the following:

a. Name of product and manufacturer.
b. Model and serial number.
c. Capacity.
d. Speed.
e. Ratings.

3. See individual identification Sections in Divisions 26 and 32 for additional equipment identification requirements.

1.4 COORDINATION

A. Modify or adjust affected work as necessary to integrate work of approved comparable products and approved substitutions.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

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

B. Delivery and Handling:

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

C. Storage:

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

7. Protect stored products from damage and liquids from freezing.
8. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.6 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Written standard warranty form furnished by individual manufacturer for a particular product and issued in the name of the Owner or endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner and issued in the name of the Owner or endorsed by manufacturer to Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included in the Project Manual, prepare a written document, using indicated form properly executed.
3. See other Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Section 01 7700 "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties meeting requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," Architect will make selection.

5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
6. Or Equal: For products specified by name and accompanied by the term "or equal," "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.

    a. Submit additional documentation required by Architect through Construction Manager in order to establish equivalency of proposed products. Unless otherwise indicated, evaluation of "or equal" product status is by the Architect, whose determination is final.

B. Product Selection Procedures:

1. Sole Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.

    a. Sole product may be indicated by the phrase "Subject to compliance with requirements, provide the following."

2. Sole Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.

    a. Sole manufacturer/source may be indicated by the phrase "Subject to compliance with requirements, provide products by the following."

3. Limited List of Products: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.

    a. Limited list of products may be indicated by the phrase "Subject to compliance with requirements, provide one of the following."

4. Non-Limited List of Products: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed or an unnamed product that complies with requirements.

    a. Non-limited list of products is indicated by the phrase "Subject to compliance with requirements, available products that may be incorporated in the Work include, but are not limited to, the following."
    b. Provision of an unnamed product is not considered a substitution, if the product complies with requirements.

5. Limited List of Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.

Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.

a. Limited list of manufacturers is indicated by the phrase "Subject to compliance with requirements, provide products by one of the following."

6. Non-Limited List of Manufacturers: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed or a product by an unnamed manufacturer that complies with requirements.

a. Non-limited list of manufacturers is indicated by the phrase "Subject to compliance with requirements, available manufacturers whose products may be incorporated in the Work include, but are not limited to, the following."
b. Provision of products of an unnamed manufacturer is not considered a substitution, if the product complies with requirements.

7. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications may additionally indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

a. For approval of products by unnamed manufacturers, comply with requirements in Section 01 2500 "Substitution Procedures" for substitutions for convenience.

C. Visual Matching Specification: Where Specifications require the phrase "match Architect's sample," provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.

1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 01 2500 "Substitution Procedures" for proposal of product.

D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or a similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

E. Sustainable Product Selection: Where Specifications require product to meet sustainable product characteristics, select products complying with indicated requirements. Comply with requirements in Division 01 sustainability requirements Section and individual Specification Sections.

1. Select products for which sustainable design documentation submittals are available from manufacturer.

2.2 COMPARABLE PRODUCTS

A. Conditions for Consideration of Comparable Products: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with the following requirements:

1. Evidence that proposed product does not require revisions to the Contract Documents, is consistent with the Contract Documents, will produce the indicated results, and is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those of the named basis-of-design product. Significant product qualities include attributes, such as type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other specific features and requirements.
3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects, with project names and addresses and names and addresses of architects and owners, if requested.
5. Samples, if requested.

B. Architect's Action on Comparable Products Submittal: If necessary, Architect will request additional information or documentation for evaluation, as specified in Section 01 3300 "Submittal Procedures."

1. Form of Approval of Submittal: As specified in Section 01 3300 "Submittal Procedures."
2. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.

C. Submittal Requirements, Two-Step Process: Approval by the Architect of Contractor's request for use of comparable product is not intended to satisfy other submittal requirements. Comply with specified submittal requirements.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 6000

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SECTION 01 7300 - EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the Work, including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. Installation of the Work.
4. Cutting and patching.
5. Coordination of Owner's portion of the Work.
6. Coordination of Owner-installed products.
7. Progress cleaning.
8. Starting and adjusting.
9. Protection of installed construction.
10. Correction of the Work.

B. Related Requirements:

1. Section 01 3300 "Submittal Procedures" for submitting surveys.
2. Section 01 7700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, replacing defective work, and final cleaning.
3. Section 02 4119 "Selective Demolition" for demolition and removal of selected portions of the building.

1.2 DEFINITIONS

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

B. Patching: Fitting and repair work required to restore construction to original conditions after installation of subsequent work.

1.3 INFORMATIONAL SUBMITTALS

A. Qualification Data: For land surveyor.

B. Certificates: Submit certificate signed by land surveyor, certifying that location and elevation of improvements comply with requirements.

1.4 QUALITY ASSURANCE

A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.

B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

1. Structural Elements: When cutting and patching structural elements, or when encountering the need for cutting and patching of elements whose structural function is not known, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational elements include the following:

    a. Primary operational systems and equipment.
    b. Fire separation assemblies.
    c. Air or smoke barriers.
    d. Fire-suppression systems.
    e. Plumbing piping systems.
    f. Mechanical systems piping and ducts.
    g. Control systems.
    h. Communication systems.
    i. Fire-detection and -alarm systems.
    j. Conveying systems.
    k. Electrical wiring systems.
    l. Operating systems of special construction.

3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:

    a. Water, moisture, or vapor barriers.
    b. Membranes and flashings.
    c. Exterior curtain-wall construction.
    d. Sprayed fire-resistive material.
    e. Equipment supports.
    f. Piping, ductwork, vessels, and equipment.
    g. Noise- and vibration-control elements and systems.

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

C. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of specified products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials. Use materials that are not considered hazardous.

C. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, gas service piping, and water-service piping; underground electrical services; and other utilities.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

C. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

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

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

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect through Construction Manager in accordance with requirements in Section 01 3100 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks and existing conditions. If discrepancies are discovered, notify Architect and Construction Manager promptly.

B. Engage a land surveyor experienced in laying out the Work, using the following accepted surveying practices:

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

2. Establish limits on use of Project site.
3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
4. Inform installers of lines and levels to which they must comply.
5. Check the location, level and plumb, of every major element as the Work progresses.
6. Notify Architect and Construction Manager when deviations from required lines and levels exceed allowable tolerances.
7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.

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

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

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

3.4 FIELD ENGINEERING

A. Identification: Owner will identify existing benchmarks, control points, and property corners.

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

1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect or Construction Manager. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect and Construction Manager before proceeding.
2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

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

1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.

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

3.5 INSTALLATION

A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb, and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
4. Maintain minimum headroom clearance of 96 inches in occupied spaces and 90 inches in unoccupied spaces, unless otherwise indicated on Drawings.

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

C. Install products at the time and under conditions that will ensure satisfactory results as judged by Architect. Maintain conditions required for product performance until Substantial Completion.

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

E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on-site and placement in permanent locations.

F. Tools and Equipment: Select tools or equipment that minimize production of excessive noise levels.

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

H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions with manufacturer.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with

integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

I. Joints: Make joints of uniform width. Where joint locations in exposed Work are not indicated, arrange joints for the best visual effect, as judged by Architect. Fit exposed connections together to form hairline joints.

3.6 CUTTING AND PATCHING

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

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

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

C. Temporary Support: Provide temporary support of Work to be cut.

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

E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching in accordance with requirements in Section 01 1000 "Summary."

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

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

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.

5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
6. Proceed with patching after construction operations requiring cutting are complete.

H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as practicable, as judged by Architect. Provide materials and comply with installation requirements specified in other Sections, where applicable.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

    a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    b. Restore damaged pipe covering to its original condition.

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

    a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch, corner to corner of wall and edge to edge of ceiling. Provide additional coats until patch blends with adjacent surfaces.

4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.7 PROGRESS CLEANING

A. Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

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

2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

    a. Use containers intended for holding waste materials of type to be stored.

4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.

B. Site: Maintain Project site free of waste materials and debris.

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

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

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

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

F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 01 5000 "Temporary Facilities and Controls."

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

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

3.8 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

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

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

D. Manufacturer's Field Service: Comply with qualification requirements in Section 01 4000 "Quality Requirements."

3.9 PROTECTION OF INSTALLED CONSTRUCTION

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

B. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.

C. Comply with manufacturer's written instructions for temperature and relative humidity.

3.10 CORRECTION OF THE WORK

A. Repair or remove and replace damaged, defective, or nonconforming Work. Restore damaged substrates and finishes.

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

B. Repair Work previously completed and subsequently damaged during construction period. Repair to like-new condition.

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

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

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

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

END OF SECTION 01 7300

SECTION 01 7700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for Contract closeout, including, but not limited to, the following:

1. Substantial Completion procedures.
2. Final completion procedures.
3. Warranties.
4. Final cleaning.

B. Related Requirements:

1. Section 01 2900 "Payment Procedures" for requirements for Applications for Payment for Substantial Completion and Final Completion.
2. Section 01 3233 "Photographic Documentation" for submitting Final Completion construction photographic documentation.
3. Section 01 7823 "Operation and Maintenance Data" for additional operation and maintenance manual requirements.
4. Section 01 7839 "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
5. Section 01 7900 "Demonstration and Training" for requirements to train the Owner's maintenance personnel to adjust, operate, and maintain products, equipment, and systems.

1.2 DEFINITIONS

A. List of Incomplete Items: Contractor-prepared list of items to be completed or corrected, prepared for the Architect's use prior to Architect's inspection, to determine if the Work is substantially complete.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of cleaning agent.

B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.

C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.4 CLOSEOUT SUBMITTALS

A. Certificates of Release: From authorities having jurisdiction.

B. Certificate of Insurance: For continuing coverage.

C. Field Report: For pest-control inspection.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Schedule of Maintenance Material Items: For maintenance material submittal items required by other Sections.

1.6 SUBSTANTIAL COMPLETION PROCEDURES

A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's "punch list"), indicating the value of each item on the list and reasons why the Work is incomplete.

B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction, permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
2. Submit closeout submittals specified in other Division 01 Sections, including Project Record Documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Construction Manager. Label with manufacturer's name and model number.

    a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Owner's signature for receipt of submittals.

5. Submit testing, adjusting, and balancing records.
6. Submit sustainable design submittals not previously submitted.
7. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.

C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Advise Owner of pending insurance changeover requirements.
2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
3. Complete startup and testing of systems and equipment.
4. Perform preventive maintenance on equipment used prior to Substantial Completion.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 01 7900 "Demonstration and Training."
6. Advise Owner of changeover in utility services.
7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
9. Complete final cleaning requirements.
10. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.

D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect and Construction Manager will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for Final Completion.

1.7 FINAL COMPLETION PROCEDURES

A. Submittals Prior to Final Completion: Before requesting final inspection for determining Final Completion, complete the following:

1. Submit a final Application for Payment in accordance with Section 01 2900 "Payment Procedures."
2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.

4. Submit pest-control final inspection report.
5. Submit Final Completion photographic documentation.

B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect and Construction Manager will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.8 LIST OF INCOMPLETE ITEMS

A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Organize list of spaces in sequential order, listed by area.
2. Organize items applying to each space by major element, including categories for ceilings, individual walls, floors, equipment, and building systems.
3. Include the following information at the top of each page:

    a. Project name.
    b. Date.
    c. Name of Architect and Construction Manager.
    d. Name of Contractor.
    e. Page number.

4. Submit list of incomplete items in the following format:

    a. MS Excel Electronic File: Architect, through Construction Manager, will return annotated file.

1.9 SUBMITTAL OF PROJECT WARRANTIES

A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.

B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.

C. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.

D. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

1. Submit on digital media acceptable to Architect or by email to Architect.

E. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:

a. Clean Project site of rubbish, waste material, litter, and other foreign substances.
b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
c. Rake grounds that are not planted, mulched, or paved to a smooth, even-textured surface.
d. Remove tools, construction equipment, machinery, and surplus material from Project site.

e. Clean exposed exterior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
f. Remove debris and surface dust from limited-access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
g. Vacuum and mop concrete.
h. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
i. Remove labels that are not permanent.
j. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
k. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
l. Clean exposed surfaces of diffusers, registers, and grills.

m. Clean exterior luminaires, lamps, globes, and reflectors to function with full efficiency.
n. Clean strainers.
o. Leave Project clean and ready for occupancy.

C. Pest Control: Comply with pest control requirements in Section 01 5000 "Temporary Facilities and Controls." Prepare written report.

D. Construction Waste Disposal: Comply with waste-disposal requirements in Section 01 5000 "Temporary Facilities and Controls."

3.2 REPAIR OF THE WORK

A. Complete repair and restoration operations required by Section 01 7300 "Execution" before requesting inspection for determination of Substantial Completion.

END OF SECTION 01 7700

SECTION 01 7823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

1. Operation and maintenance documentation directory manuals.
2. Emergency manuals.
3. Systems and equipment operation manuals.
4. Systems and equipment maintenance manuals.
5. Product maintenance manuals.

B. Related Requirements:

1. Section 01 3300 "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.

1.2 DEFINITIONS

A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.

B. Subsystem: A portion of a system with characteristics similar to a system.

1.3 CLOSEOUT SUBMITTALS

A. Submit operation and maintenance manuals indicated. Provide content for each manual as specified in individual Specification Sections, and as reviewed and approved at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.

1. Architect will comment on whether content of operation and maintenance submittals is acceptable.
2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.

B. Format: Submit operation and maintenance manuals in the following format:

1. Submit on digital media acceptable to Architect. Enable reviewer comments on draft submittals.

C. Initial Manual Submittal: Submit draft copy of each manual at least 10 days before commencing demonstration and training. Architect will comment on whether general scope and content of manual are acceptable.

D. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 3 days before commencing demonstration and training. Architect will return copy with comments.

1. Correct or revise each manual to comply with Architect's comments. Submit copies of each corrected manual within 3 days of receipt of Architect's comments and prior to commencing demonstration and training.

E. Comply with Section 01 7700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

1.4 FORMAT OF OPERATION AND MAINTENANCE MANUALS

A. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.

1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
2. File Names and Bookmarks: Bookmark individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

1.5 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

A. Organization of Manuals: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

1. Title page.
2. Table of contents.
3. Manual contents.

B. Title Page: Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of Owner.
4. Date of submittal.

5. Name and contact information for Contractor.
6. Name and contact information for Construction Manager.
7. Name and contact information for Architect.
8. Name and contact information for Commissioning Authority.
9. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
10. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

D. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

1.6 EMERGENCY MANUALS

A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.

B. Content: Organize manual into a separate section for each of the following:

1. Type of emergency.
2. Emergency instructions.
3. Emergency procedures.

C. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:

1. Fire.
2. Flood.
3. Gas leak.
4. Water leak.
5. Power failure.
6. Water outage.
7. System, subsystem, or equipment failure.
8. Chemical release or spill.

D. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

E. Emergency Procedures: Include the following, as applicable:

1. Instructions on stopping.
2. Shutdown instructions for each type of emergency.
3. Operating instructions for conditions outside normal operating limits.
4. Required sequences for electric or electronic systems.
5. Special operating instructions and procedures.

1.7 SYSTEMS AND EQUIPMENT OPERATION MANUALS

A. Systems and Equipment Operation Manual: Assemble a complete set of data indicating operation of each system, subsystem, and piece of equipment not part of a system. Include information required for daily operation and management, operating standards, and routine and special operating procedures.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.

B. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
2. Performance and design criteria if Contractor has delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.
8. Piped system diagrams.
9. Precautions against improper use.
10. License requirements including inspection and renewal dates.

C. Descriptions: Include the following:

1. Product name and model number. Use designations for products indicated on Contract Documents.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

D. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

E. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

F. Piped Systems: Diagram piping as installed, and identify color coding where required for identification.

1.8 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

A. Systems and Equipment Maintenance Manuals: Assemble a complete set of data indicating maintenance of each system, subsystem, and piece of equipment not part of a system. Include manufacturers' maintenance documentation, preventive maintenance procedures and frequency, repair procedures, wiring and systems diagrams, lists of spare parts, and warranty information.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.

B. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranties and bonds as described below.

C. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

D. Manufacturers' Maintenance Documentation: Include the following information for each component part or piece of equipment:

1. Standard maintenance instructions and bulletins; include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

a. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
3. Identification and nomenclature of parts and components.
4. List of items recommended to be stocked as spare parts.

E. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:

1. Test and inspection instructions.
2. Troubleshooting guide.
3. Precautions against improper maintenance.
4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
5. Aligning, adjusting, and checking instructions.
6. Demonstration and training video recording, if available.

F. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.

G. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

I. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.

1. Do not use original project record documents as part of maintenance manuals.

1.9 PRODUCT MAINTENANCE MANUALS

A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

B. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

C. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

D. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

E. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

F. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

G. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 7823

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SECTION 01 7839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for Project Record Documents, including the following:

1. Record Drawings.
2. Record specifications.
3. Record Product Data.
4. Miscellaneous record submittals.

B. Related Requirements:

1. Section 01 7300 "Execution" for final property survey.
2. Section 01 7700 "Closeout Procedures" for general closeout procedures.
3. Section 01 7823 "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.2 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with the following:
1. Number of Copies: Submit copies of Record Drawings as follows:

a. Initial Submittal:

1) Submit one paper-copy set(s) of marked-up record prints.
2) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.

b. Final Submittal:
1) Submit PDF electronic files of scanned Record Prints and one set of file prints.
2) Print each drawing, whether or not changes and additional information were recorded.

B. Record Specifications: Submit annotated PDF electronic files of Project's Specifications, including addenda and Contract modifications.

C. Record Product Data: Submit annotated PDF electronic files and directories of each submittal.

1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

D. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit annotated PDF electronic files and directories of each submittal.

E. Reports: Submit written report indicating items incorporated into Project Record Documents concurrent with progress of the Work, including revisions, concealed conditions, field changes, product selections, and other notations incorporated.

1.3 RECORD DRAWINGS

A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.

1. Preparation: Mark record prints to show the actual installation, where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.

    a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    b. Accurately record information in an acceptable drawing technique.
    c. Record data as soon as possible after obtaining it.
    d. Record and check the markup before enclosing concealed installations.
    e. Cross-reference record prints to corresponding photographic documentation.

2. Content: Types of items requiring marking include, but are not limited to, the following:

    a. Dimensional changes to Drawings.
    b. Revisions to details shown on Drawings.
    c. Depths of foundations.
    d. Locations and depths of underground utilities.
    e. Revisions to routing of piping and conduits.
    f. Revisions to electrical circuitry.
    g. Actual equipment locations.
    h. Duct size and routing.
    i. Locations of concealed internal utilities.
    j. Changes made by Change Order or Construction Change Directive.
    k. Changes made following Architect's written orders.
    l. Details not on the original Contract Drawings.
    m. Field records for variable and concealed conditions.
    n. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
4. Mark record prints with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.

5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize record prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
2. Format: Annotated PDF electronic file with comment function enabled.
3. Identification: As follows:

    a. Project name.
    b. Date.
    c. Designation "PROJECT RECORD DRAWINGS."
    d. Name of Architect and Construction Manager.
    e. Name of Contractor.

1.4 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation, where installation varies from that indicated in Specifications, addenda, and Contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
3. Note related Change Orders, Record Product Data, and Record Drawings where applicable.

B. Format: Submit record specifications as annotated PDF electronic file.

1.5 RECORD PRODUCT DATA

A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and revisions to Project Record Documents as they occur; do not wait until end of Project.

B. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.

3. Note related Change Orders, Record Specifications, and Record Drawings where applicable.

C. Format: Submit Record Product Data as annotated PDF electronic file.

1. Include Record Product Data directory organized by Specification Section number and title, electronically linked to each item of Record Product Data.

1.6 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

B. Format: Submit miscellaneous record submittals as PDF electronic file.

1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

1.7 MAINTENANCE OF RECORD DOCUMENTS

A. Maintenance of Record Documents: Store Record Documents in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's and Construction Manager's reference during normal working hours.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 7839

SECTION 01 7900 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:

1. Instruction in operation and maintenance of systems, subsystems, and equipment.

1.3 INFORMATIONAL SUBMITTALS

A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.

1. Indicate proposed training modules using manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of video recording of live instructional module.

B. Attendance Record: For each training module, submit list of participants and length of instruction time.

1.4 COORDINATION

A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.

B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.

C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data have been reviewed and approved by Architect.

1.5 INSTRUCTION PROGRAM

A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.

B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:

1. Basis of System Design, Operational Requirements, and Criteria: Include the following:

    a. System, subsystem, and equipment descriptions.
    b. Performance and design criteria if Contractor is delegated design responsibility.
    c. Operating standards.
    d. Regulatory requirements.
    e. Equipment function.
    f. Operating characteristics.
    g. Limiting conditions.
    h. Performance curves.

2. Documentation: Review the following items in detail:

    a. Emergency manuals.
    b. Systems and equipment operation manuals.
    c. Systems and equipment maintenance manuals.
    d. Product maintenance manuals.
    e. Project Record Documents.
    f. Identification systems.
    g. Warranties and bonds.
    h. Maintenance service agreements and similar continuing commitments.

3. Emergencies: Include the following, as applicable:

    a. Instructions on meaning of warnings, trouble indications, and error messages.
    b. Instructions on stopping.
    c. Shutdown instructions for each type of emergency.
    d. Operating instructions for conditions outside of normal operating limits.
    e. Sequences for electric or electronic systems.
    f. Special operating instructions and procedures.

4. Operations: Include the following, as applicable:

    a. Startup procedures.
    b. Equipment or system break-in procedures.
    c. Routine and normal operating instructions.
    d. Regulation and control procedures.

e. Control sequences.
f. Safety procedures.
g. Instructions on stopping.
h. Normal shutdown instructions.
i. Operating procedures for emergencies.
j. Operating procedures for system, subsystem, or equipment failure.
k. Seasonal and weekend operating instructions.
l. Required sequences for electric or electronic systems.
m. Special operating instructions and procedures.

5. Adjustments: Include the following:

a. Alignments.
b. Checking adjustments.
c. Noise and vibration adjustments.
d. Economy and efficiency adjustments.

6. Troubleshooting: Include the following:

a. Diagnostic instructions.
b. Test and inspection procedures.

7. Maintenance: Include the following:

a. Inspection procedures.
b. Types of cleaning agents to be used and methods of cleaning.
c. List of cleaning agents and methods of cleaning detrimental to product.
d. Procedures for routine cleaning.
e. Procedures for preventive maintenance.
f. Procedures for routine maintenance.
g. Instruction on use of special tools.

8. Repairs: Include the following:

a. Diagnosis instructions.
b. Repair instructions.
c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
d. Instructions for identifying parts and components.
e. Review of spare parts needed for operation and maintenance.

1.6 PREPARATION

A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 01 7823 "Operation and Maintenance Data."

B. Set up instructional equipment at instruction location.

1.7 INSTRUCTION

A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.

B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

1. Owner will furnish Contractor with names and positions of participants.

C. Scheduling: Provide instruction at mutually agreed-on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.

1. Schedule training with Owner, through Construction Manager, with at least seven days' advance notice.

D. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.

E. Cleanup: Collect used and leftover educational materials and give to Owner. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

PART 2 - PRODUCTS

PART 3 - EXECUTION

END OF SECTION 01 7900

SECTION 02 4119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Demolition and removal of selected portions of building or structure.
2. Demolition and removal of selected site elements.
3. Salvage of existing items to be reused or recycled.

B. Related Requirements:

1. Section 01 1000 "Summary" for restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.
2. Section 01 7300 "Execution" for cutting and patching procedures.
3. Section 31 1000 "Site Clearing" for site clearing and removal of above- and below-grade improvements not part of selective demolition.

1.2 DEFINITIONS

A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.

B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse.

C. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.

D. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

E. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

1.3 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.

1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.4 INFORMATIONAL SUBMITTALS

A. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and, for noise control. Indicate proposed locations and construction of barriers.

B. Schedule of Selective Demolition Activities: Indicate the following:

1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
2. Interruption of utility services. Indicate how long utility services will be interrupted.
3. Coordination for shutoff, capping, and continuation of utility services.
4. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.

C. Pre-demolition Photographs or Video: Show existing conditions of adjoining construction, including finish surfaces, that might be misconstrued as damage caused by salvage and demolition operations. Comply with Section 01 3233 "Photographic Documentation." Submit before Work begins.

D. Warranties: Documentation indicating that existing warranties are still in effect after completion of selective demolition.

1.5 CLOSEOUT SUBMITTALS

A. Inventory: Submit a list of items that have been removed and salvaged.

1.6 FIELD CONDITIONS

A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

1. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect, Construction Manager, and Owner. Hazardous materials will be removed by Owner under a separate contract.

E. Storage or sale of removed items or materials on-site is not permitted.

F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1. Maintain fire-protection facilities in service during selective demolition operations.

1.7 COORDINATION

A. Arrange selective demolition schedule so as not to interfere with Owner's operations.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ANSI/ASSP A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.

C. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs.

1. Inventory and record the condition of items to be removed and salvaged.
2. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.

1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
2. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
3. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.

    a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
    b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
    c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
    d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
    e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
    f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
    g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

3.3 PROTECTION

A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building(s).
2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.

B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

1. Strengthen or add new supports when required during progress of selective demolition.

C. Remove temporary barricades and protections where hazards no longer exist.

3.4 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
5. Maintain fire watch during and for at least two hours after flame-cutting operations.
6. Maintain adequate ventilation when using cutting torches.
7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
10. Dispose of demolished items and materials promptly.

B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

C. Removed and Salvaged Items:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area off-site.
5. Protect items from damage during transport and storage.

D. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse.
2. Pack or crate items after cleaning and repairing. Identify contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

E. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Concrete: Demolish in small sections. Using power-driven saw, cut concrete to a depth of at least 3/4 inch at junctures with construction to remain. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete. Neatly trim openings to dimensions indicated.

B. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, and then remove masonry between saw cuts.

C. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, and then break up and remove.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn demolished materials.

3.7 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 02 4119

SECTION 03 10 00 - CONCRETE FORMWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SECTION INCLUDES

A. Provide concrete formwork for all cast-in-place concrete.

1.3 RELATED SECTIONS

A. Section 03 2000 - Reinforcing Steel.

B. Section 03 3000 - Cast-in-Place Concrete.

1.4 REFERENCES

A. The latest editions of specifications and standards referenced herein and published by the following organizations applies to the Work of this Section only to the extent specified by the reference.

ACI	American Concrete Institute
PS	U.S. Department of Commerce Product Standards
WCLIB	West Coast Lumber Inspection Bureau
WWPA	Western Wood Products Association

1.5 DESIGN REQUIREMENTS

A. Design, engineer and construct formwork, shoring and bracing to conform to requirements of 2022 CBC and the following Publications.

ACI 347 - Standard Recommended Practice for Concrete Formwork.
ACI 301 - Specifications for Structural Concrete for Buildings.
ACI 318 - Building Code Requirements for Reinforced Concrete

B. Complete concrete elements to conform to required shape, line and dimensions. Include all possible loading conditions in the design of formwork and shoring. Ensure all applicable safety

laws are strictly enforced and maintain a safe construction Project.

1.6 SUBMITTALS

A. General: Submit the following according to Conditions of Contract and Division 1 Specifications Sections.

1.7 QUALITY ASSURANCE

A. Codes and Standards: Perform Work in compliance with applicable requirements of governing authorities having jurisdiction.

Chapter 19A of the 2022 California Building Code including all Applicable State of California Amendments (CBC).

1. Article 1.05 Design Requirements of this Section 03 1000.

B. Construction and maintenance of all concrete formwork shall be under the continuous supervision of a foreman with not less than 3 years of successful experience in the forming and the removal of forms for architectural quality work.

1.8 DELIVERY, STORAGE AND PROTECTION

A. Deliver and store all forms and materials above ground in a manner to protect them from damage, contamination and deterioration.

1.9 COORDINATION

A. Coordinate the Work of other Sections and Divisions shown to be incorporated into concrete elements. Work of others shown passing through footings and concrete walls are only allowed if detailed on the Structural Drawings.

PART 2 – PRODUCTS

2.1 FORM MATERIAL

A. Forms for Unexposed Concrete: Form concrete surfaces which will not be exposed in the finished structure with plywood, lumber, metal or other acceptable material.

1. Lumber: Standard or better grade Douglas Fir, meeting the requirements of WCLIB “Standard Grading Rules No. 16" or WWPA “Western Lumber Grading Rules 88. Use boards which are surfaced on at least 2 edges and one side for a tight fit.

2. Plywood: B-B Plyform, Class I, exterior grade meeting the requirements of PS 1, 5/8-inch minimum thickness for 12 inch stud spacing and 3/4-inch minimum thickness for 16 inch stud spacing.

B. Forms for Exposed Finish Concrete: Construct formwork for exposed concrete surfaces with plywood, metal, metal-framed plywood faced or other acceptable panel-type materials, to provide continuous, straight, smooth, exposed surfaces. Furnish in largest practical sizes to minimize number of joints. Provide form material with sufficient thickness to withstand pressure of newly placed concrete without bow or deflection.

C. Framing, Studding and Bracing: “Standard” or “Construction” grade Douglas Fir, S4S, meeting the requirements of the WCLIB “Standard Grading Rules No. 16” or WWPA “Western Lumber Grading Rules 88.”

D. Form Coating: Non-grain raising and non-staining type that will not leave residual matter on surface of concrete or adversely affect proper bonding of subsequent application of other material applied to concrete surface. Coatings containing mineral oils or other nondrying ingredients will not be permitted. Form coating for use with form liners shall be of type recommended by form liner manufacturer.

E. Nails: Common wire, steel.

F. Waterstop: 3/16" thick, ribbed, PVC waterstop by Greenstreak or approved equal.

2.2 TIES AND SPREADERS

A. Form Ties and Spreaders: Standard metal form clamp assembly, of type acting as spreaders and leaving no metal within 1 inch of concrete surfaces. Inner tie rod shall be left in concrete when forms are removed. Wire ties or wood spreaders will not be permitted. Form ties shall be a type which does not leave an open hole through the concrete and which permits neat and solid patching at every hole.

PART 3 – EXECUTION

3.1 ERECTION

A. Concrete below grade may be placed directly against earth in open trenches. Side forms for footings may be of earth provided the soil will stand without caving and the side of the banks are made with neat cuts to minimum dimensions indicated on the Drawings.

B. Where footing excavations exceed widths and lengths shown on the Drawings, extend formwork to bottom of excavation.

C. Make all necessary provisions to prevent cave-ins during the placement of concrete.

D. All forms shall be constructed true to line and level, sufficiently tight to prevent leakage of mortar, and shall conform per ACI Standards, to the dimensions of the finished concrete as shown on the Drawings. Finished concrete surfaces shall show no visible signs of bow or deflection.

E. Wooden supports or spreaders for forms shall not extend into concrete pours.

F. Set and secure all required steel assemblies, angles, pipe sleeves, bolts, inserts, and other such items required to be anchored in the concrete before the concrete is placed.

G. Construct all forms straight, true, plumb, and square within a tolerance horizontally of one in 200 and a tolerance vertically of one in 500.

H. Keep forms sufficiently wetted to prevent joints opening up before concrete is placed.

I. Bracing:
1. Properly brace and tie the forms together so as to maintain position and shape and to ensure safety of personnel.
2. Construct all bracing, supporting members and centering of ample size and strength to safely carry, without excessive deflections, all dead and live loads to which they may be subjected.
3. Properly space the forms apart and securely tie them together using metal spreader ties that give positive tying and accurate spreading.

3.2 REMOVAL OF FORMS

A. Do not disturb or remove forms until the concrete has developed sufficient strength to safely sustain its own weight and superimposed loads above. After concrete is placed, a minimum time period of ten days shall elapse before the removal of forms can be considered.
1. Forms for at grade concrete may be removed in 24 hours providing removal does not damage surfaces and edges of concrete.

B. Use all means necessary to protect workers, passers by, the installed Work of other trades, and the complete safety of the structure.

C. Cut nail and tie wires or form ties off flush, and level all surfaces smooth and clean.

D. Remove metal spreader ties on exposed concrete by removing or snapping off inside the wall surfaces and patching up the resulting pockets to match the surrounding areas.

E. Flush all holes resulting from the use of spreaders, rods and sleeve nuts, using water, and then solidly pack throughout the wall thickness with cement grout applied under pressure by means

of a grouting gun; grout shall be one part Portland cement to 2.5 parts sand; apply grout immediately after removing forms.

Section continued on next page

3.3 SUBMITTAL REQUIREMENTS AND SCHEDULE

A. Include this form with submittals of this Specification Section, unless a substitution product is being proposed, in which case refer to Division 1 Section “Substitutions” for Substitution requests.

Contractor’s Initials — Contractor is to acknowledge with initials each submittal included. Attach a letter of explanation for each submittal not included

_____ All submitted products are as specified.

B. SUBMITTAL SCHEDULE:

_____ 1. Qualifications (relevant experience) of foreman.

END OF SECTION 03 1000

SECTION 03 20 00 - REINFORCING STEEL

PART 1 – GENERAL

1.1 RELATED DOCUMENT

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

1.2 SECTION INCLUDES

A. Furnish, fabricate and install all reinforcing steel for cast-in-place concrete as necessary to complete all reinforced concrete work.

B. Furnish and fabricate reinforcing steel only for masonry construction.

1.3 RELATED SECTIONS

A. Section 03 1000 - Concrete Formwork

B. Section 03 3000 - Cast-in-Place Concrete

1.4 REFERENCES

A. The latest editions of specifications and standards referenced herein and published by the following organizations apply to the Work only to the extent specified by the reference.

ASTM	American Society for Testing and Materials
ACI	American Concrete Institute
AWS	American Welding Society
CRSI	Concrete Reinforcing Steel Institute
CBC STDS	2022 California Building Code Standards

1.5 SUBMITTALS

A. General: Submit the following according to Conditions of Contract and Division 1 Specifications Sections.

B. Refer to “Submittal Requirements and Schedules” Article at the end of this Section for required

submittals.

1.6 QUALITY ASSURANCE

A. Codes and Standards: Perform Work in accordance with applicable requirements of governing authorities having jurisdiction.
   1. Chapters 19A and 21A of the 2022 California Building Code.

B. Provide mill Reports for all types and sizes of reinforcing steel for review and acceptance prior to fabrication and transporting reinforcing steel to the construction site.
   1. Mill reports shall contain the steel source, description, heat number, yield point, ultimate tensile strength, elongation percentage, bend test and chemical analysis.
      a. If the reports show that material is satisfactory no tests will be required.
      b. For foreign steel, testing as specified below will be required by a testing laboratory acceptable to the Architect and DSA.
      c. Certification from any other sources will not be acceptable.
   2. Ensure that the material delivered for use is that represented by the mill reports and obtain copies of mill reports, examine them, certify whether the material represented complies with Specifications requirements, and make distribution of reports as required. Report chemical composition of each heat, as determined by ladle analysis.
   3. Where materials proposed for use cannot be identified, the Owner shall pay for an approved testing laboratory to make one series of tests (tensile and bend) from each 2.5 tons, or fraction thereof, of each size and kind of reinforcing steel. Include 2 samples, minimum, of sufficient length to allow tests to be made on the as-rolled bar. The Owner shall then back-charge the Contractor for all testing fees.

C. Contact Architect for observation of all concrete reinforcing.

D. Testing and Inspections shall comply with Section 014100 and as noted in the Contract Documents.

1.7 DELIVERY, STORAGE AND PROTECTION

A. Bundle reinforcing steel and tag with suitable identification to facilitate sorting and placing in accordance to the placement drawings.

B. Store above ground, in a manner to prevent excessive rusting and fouling with dirt, grease, and other bond breaking coatings.

1.8COORDINATION

A. Coordinate the Work of other Sections and Divisions shown to be incorporated into concrete elements. Work of others shown passing through footings and concrete walls are only allowed if detailed on the Structural Drawings.

B. Coordinate placement locations of all masonry dowels with Section 04 2000 whenever they are required to be embedded in cast-in-concrete.

PART 2 – PRODUCTS

2.1 MATERIALS

A. All materials shall be new, free from rust and mill scale. Reinforcing bars shall comply with ASTM A 615:

Grade 60 for all bars .

B. Reinforcing bars shown welded on the Drawings and welded in the field shall be new material, free from rust and mill scale, conforming to ASTM A 706, Grade 60 for all sizes.

C. Tie Wire: 16 gage, annealed conforming to ASTM A 82.

D. Welding Electrodes: AWS A5.1 or Grade E70XX for welding Grade 60, ASTM A 706 bars.

2.2 SUPPORTS FOR REINFORCING BARS

A. Provide supports for reinforcement including bolsters, chairs, spacers, concrete block and other devices for spacing, supporting and fastening reinforcing bars in place.

PART 3 – EXECUTION

3.1 FABRICATION

A. General
1. Bend all bars cold. Comply with ACI 318-14 Section 26.6.3.
2. Do not use bars with kinks or bend not shown on the Drawings.
3. Make bends for stirrups and ties in accordance with details on the Drawings.

B. Fabricate and place reinforcing steel in accordance with CRSI Manual of Practice, ACI" SP-66 and ACI 318-14.

C. Welding of ASTM A 706 reinforcing shall conform to ACI 318-14 Section 26.6.4.

3.2 PLACING

A. General: Before commencing with concrete placement, accurately place all concrete reinforcing steel including dowels for masonry. Secure in place and provide positive support using concrete block, metal chairs or spacers, or by metal hangers. Set tie-wire ends directed into concrete, away from formed exposed concrete surfaces. Comply with ACI 318-14 Section 26.6.2.

1. Reinforcing steel shall be placed in accordance with the Drawings and the latest edition of the CRSI "Manual of Standard Practice".

B. Clearance:
1. Preserve clear space between bars of not less than one times the nominal diameter of reinforcing, but not less than 1.33 times the maximum size of coarse aggregate, nor less than 1 inch.
2. Provide minimum concrete coverage for reinforcing as noted in the General Notes shown on Drawings. Minimum concrete coverage dimensions also applies to tie wires.

C. Splicing:
1. Horizontal and vertical bars:
a. Place bars with minimum lap at splices to develop the strength of the bar.
b. Bars may be wired together at laps.
c. Whenever possible, stagger the splices of adjacent bars.
d. Splice bars a minimum as shown on the Drawings.
e. Clear spacing to be the same as Section 3.2B(1) above.

3.3 CLEANING REINFORCEMENT

A. Steel reinforcement, at the time concrete is placed, shall be free from rust, loose mill scale, oil, paint, and all other coatings which will destroy or reduce bond between steel and concrete, and between steel and grout. Comply with ACI 318-14, Section 26.6.1.2.

Section continued on next page

3.4 SUBMITTAL REQUIREMENTS AND SCHEDULE

A. Include this form with submittals of this Specification Section, unless a substitution product is being proposed, in which case refer to Division 1 Section "Substitutions" for Substitution requests.

Contractor's Initials

Contractor is to acknowledge with initials each submittal included. Attach a letter of explanation for each submittal not included.

_____ All submitted products are as specified.

B. SUBMITTAL SCHEDULE:

_____ 1. Mill certificates for each size and grade of steel intended for use in the Project, stating physical and chemical properties and compliance with ASTM requirements.

_____ 2. Placement sheets and related details. Indicate sizes, fabricated shapes, dimensions, spacing, material, grade and locations within concrete and masonry Work.

_____ 3. Epoxy adhesive.

END OF SECTION 03 2000

SECTION 03 30 00 - CAST-IN-PLACE CONCRETE

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SECTION INCLUDES

A. Provide finish, cure, repair, protect and clean (where exposed) all cast-in-place concrete required for foundations, starter walls, slabs-on-grade, and other concrete indicated.

B. Provide moisture barriers, granular subbase and sand cover for moisture barrier located below concrete slabs cast-on-grade.

1.3 RELATED SECTIONS

A. Section 03 1000 - Concrete Formwork

B. Section 03 2000 - Reinforcing Steel

1.4 REFERENCES

A. The latest editions of specifications and standards referenced herein and published by the following organizations apply to the Work of this Section only to the extent specified by the reference.

ACI	American Concrete Institute
ASTM	American Society for Testing and Materials
CBC STDS	2022 California Building Code Standards

1.5 SUBMITTALS

A. General: Submit the following according to Conditions of Contract and Division 1 Specifications Sections.

B. Refer to “Submittal Requirements and Schedules” Article at the end of this Section for required submittals.

1.6 QUALITY ASSURANCE

A. Codes and Standards: Perform Work in compliance with applicable requirements of governing authorities having jurisdiction.
1. Chapter 19A of the 2022 California Building Code including all applicable State of California Amendments (CBC).
2. ACI 301 - Specifications for Structural Concrete for Buildings.
3. ACI 318 - Building Code Requirements for Reinforced Concrete.
4. ACI Publication SP-15 - Specifications for Structural Concrete for Buildings with selected ACI and ASTM references. All apply to the Work of this Section where applicable.

B. Specified aggregates, cement, and color from single sources only.

C. Approved concrete mix designs shall not be altered without approval of the Architect.

D. Testing and Inspection: Shall comply with Special Inspection form D-103, Special Inspections stated in structural drawings, and with the 2022 CBC except as modified below.
1. Contractor shall coordinate and provide access to all locations for specimen sampling and inspection.
2. Contractor shall notify Project Inspector at least 48 hours prior to commencing preparation for placement of concrete. Coordinate and provide access to all locations for testing and inspection of Concrete Work.

E. Contractor and tradesmen constructing forms, placing and curing Architectural concrete for walls, columns and piers shall have at least five years of successful experience in this work. Provide experience records and references to Architect immediately upon receiving notice to proceed.

F. Concrete must have a Floor Flatness, Ff, of at least 50 with a minimum of 35. Concrete must have a Floor Levelness, Fl, of at least 40.

1.7 DELIVERY, STORAGE AND PROTECTION

A. Deliver and store all materials in a manner to protect them from damage, contamination and deterioration.

1.8 COORDINATION

A. Coordinate with Divisions 12, 14, 22, 26 and other Divisions requiring items of their Work to be embedded into cast-in-place concrete.

B. Notify Architect and Project Inspector a minimum of 24 hours prior to each commencement of concrete placement and before forms are closed-in.

PART 2 – PRODUCTS

2.1 CONCRETE MATERIALS

A. Cement: ASTM C 150, Type II

B. Course and Fine Aggregates: ASTM C 33

C. Water: Clean and not be detrimental to concrete

2.2 ADMIXTURES

A. Chemical: Water Reducing per ASTM C 494, Type A

B. Fly Ash: ASTM C 618, Type F

2.3 ACCESSORIES

A. Bonding Agent: Polymer resin emulsion

B. Vapor Barrier: Class A conforming to ASTM Standard E 1745-11.

C. Non-Shrink Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticzing agents, capable of developing a minimum compressive strength of 5,000 psi within 28 days.

D. Concrete Adhesive: “SET-XP” Adhesive by Simpson Strong-Tie Company, Hilti (Hilti “HIT-RE 500-V3”), or approved equal.

E. Curing compound:
1. Liquid membrane-forming compound complying with ASTM C 309, Type 1 (1D), Class B, guaranteed not to affect the appearance of the concrete surfaces, and the bond, adhesion,

or effectiveness of finishes and surface treatment specified herein to be applied to concrete.

2. Curing compound used on exposed concrete surfaces shall be non-discoloring, fast drying and shall be conclusively demonstrated not to darken or yellow with age.
3. Curing compound for use on concrete floors to receive adhered covering shall be specially formulated for such use and shall be certified by the manufacturer not to inhibit the bonding qualities of flooring adhesives.

2.4 JOINT DEVICES AND FILLER MATERIALS

A. Closed cell polyvinyl chloride form, resilient, recovery of 95 percent if not compressed more than 50 percent of original thickness.

B. Construction Joint Devices: Non-metallic tongue and groove profile.

C. Sealants and primers: As specified in Section 07 9000.

2.5 CONCRETE MIX

A. Submit concrete mix design(s) prepared by a testing laboratory, designed by a registered civil or structural engineer, and approved by Architect review and acceptance, prior to delivery of concrete to site.

1. Provide cast-in-concrete to meet the following:
    a. Normal (Stone) weight concrete in accordance with ACI 301, except as noted below
    b. Minimum 28-day compressive strength:
        1. Slab-on-grade & footings: 3,000 psi
    c. Maximum water-cement ratio:
        1. Slab-on-grade & footings: 0.45
        2. Footings: 0.45
        3. Retaining walls: 0.45
        4. Caisson: 0.45
    d. Slump: 4" (plus or minus 1 inch) unless noted otherwise.
    e. Fly Ash - (up to a maximum of 18% of cement content by volume).
    f. Coarse aggregate to be Santa Margarita Granite Aggregate, San Gabriel Aggregate, Heavy-Media Processed; or other clean coarse aggregate of lower or equal reactivity.
    g. Fine aggregate from Santa Margarita Granite Aggregate, Moorpark Source, or other clean fine aggregate of lower or equal reactivity.
    h. Calcium chloride not allowed.

B. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete in accordance with ASTM C 94 and furnish batch ticket information.

2.6 SUBBASE BELOW CONCRETE SIDEWALKS AND SLABS-ON-GRADE:

A. Clean, free draining Santa Margarita Granite sand, Moorpark Source, or those pre-approved non-reactive fine aggregate.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Verify requirements for minimum concrete cover over reinforcement.

B. Verify anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not cause hardship in placing concrete.

3.2 PREPARATION

A. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent in accordance with manufacturer's instructions.

B. In locations where new concrete is doweled to existing Work, drill holes in existing concrete, insert steel dowels and fill solid with concrete adhesive.

C. Coordinate the placement of joist devices with erection of concrete formwork and placement of form accessories.

3.3 PLACING CONCRETE

A. Place concrete in accordance with ACI 318-14 Section 26.5.2, and ACI Publication SP 15.

B. Place concrete continuously between predetermined expansion, control, and construction joints.

C. Do not interrupt successive placement; do not permit cold joints to occur.

D. Place slabs in checkerboard pattern as indicated.

E. Ensure reinforcement, inserts, embedded parts, formed expansion and contraction joints are not disturbed during concrete placement.

F. Maintain legible copies of all transit mixed trip tickets signed by a certified weight master and records of concrete placement. Record date, location, quantity, air temperature, and test samples taken for each load delivered to site.

3.4 CONCRETE FINISHING

A. Provide smooth rubbed finish for exposed interior concrete walls.

B. Finish concrete floor surfaces in accordance with ACI 301.
1. Steel trowel surfaces for all interior slabs unless noted otherwise.

3.5 CURING AND PROTECTION

A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

C. Cure floor surfaces with two (2) coats of spray applied curing compound in accordance with ACI 308.

D. Curing of concrete shall comply with ACI 318–14 Section 26.5.3.

3.6 PATCHING

A. Notify Architect and Project Inspector to review concrete surfaces immediately upon removal of forms.

B. Excessive honeycomb or embedded debris in concrete in not acceptable. Notify Architect upon discovery.

C. Patch imperfections as directed.

3.7 DEFECTIVE CONCRETE

A. Defective Concrete Definition: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.

B. Repair or replacement of defective concrete will be determined by the Architect.

C. Do not patch, fill, tough-up, repair, or replace exposed concrete except upon approval of Architect for each individual area.

3.8 TESTS & INSPECTIONS

A. Tests and inspections shall comply with Section 01 4100 of these specifications.

Section continued on next page

3.8 SUBMITTAL REQUIREMENTS AND SCHEDULE

A. Include this form with submittals of this Specification Section, unless a substitution product is being proposed, in which case refer to Division 1 Section “Substitutions” for Substitution requests.

Contractor’s Initials — Contractor is to acknowledge with initials each submittal included. Attach a letter of explanation for each submittal not included.

_____ All submitted products are as specified.

B. SUBMITTAL SCHEDULE:

_____ 1. Product Data:

a. Concrete Aggregates
b. Cement
c. Admixtures
d. Integral Colors
e. Curing materials
f. Attachment devices

_____ 2. Concrete mix designs.

END OF SECTION 03 3000

SECTION 04 20 00 - UNIT MASONRY ASSEMBLIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes unit masonry assemblies consisting of the following:

1. Concrete masonry units (CMUs).
2. Decorative concrete masonry units.
3. Mortar and grout.
4. Reinforcing steel.
5. Ties and anchors.
6. Miscellaneous masonry accessories.

B. Related Sections include the following:

1. Division 4 Section “Unit Masonry Finishes” for protection and finishing of Unit Masonry Assemblies.
2. Division 7 Section "Sheet Metal Flashing and Trim" for exposed sheet metal flashing.
3. Division 7 Section "Joint Sealants" for sealing control and expansion joints in unit masonry.

C. Products installed, but not furnished, under this Section include the following:

1. Manufactured reglets in masonry joints for metal flashing, furnished under Division 7 Section "Sheet Metal Flashing and Trim."

1.3 DEFINITIONS

A. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

1.4 PERFORMANCE REQUIREMENTS

A. Provide structural unit masonry that develops indicated net-area compressive strengths (f'_m) at 28 days.

B. Determine net-area compressive strength (f'_m) of masonry by testing masonry prisms according to ASTM C 1314, before delivering masonry to the jobsite.

1.5 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: For the following:

1. Reinforcing Steel: Detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315, "Details and Detailing of Concrete Reinforcement." Show elevations of reinforced walls. Provide drawings on 24” x 36” sheets.
2. Fabricated Flashing: Detail corner units, end-dam units, and other special applications.

C. Samples for Initial Selection: For the following:

1. Decorative concrete masonry units, in the form of small-scale units.
2. Colored mortar.

D. Samples for Verification: For each type and color of the following:

1. Exposed Decorative concrete masonry units.
2. Pigmented mortar. Make Samples using same sand and mortar ingredients to be used on Project. Label Samples to indicate types and amounts of pigments used.

E. List of Materials Used in Constructing Mockups: List generic product names together with manufacturers, manufacturers' product names, model numbers, lot numbers, batch numbers, source of supply, and other information as required to identify materials used. Include mix proportions for mortar and grout and source of aggregates.

1. Submittal is for information only. Neither receipt of list nor approval of mockup constitutes approval of deviations from the Contract Documents unless such deviations are specifically brought to the attention of Architect and approved in writing.

F. Material Certificates: Include statements of material properties indicating compliance with requirements including compliance with standards and type designations within standards. Provide for each type and size of the following:

1. Masonry units.
   a. Include material test reports substantiating compliance with requirements.
   b. For masonry units used in structural masonry, include data and calculations establishing average net-area compressive strength of units.
2. Cementitious materials. Include brand, type, and name of manufacturer.
3. Pre-blended, dry mortar mixes. Include description of type and proportions of ingredients.
4. Grout mixes. Include description of type and proportions of ingredients.
5. Reinforcing bars.
6. Anchors, ties, and metal accessories.

G. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.

1. Include test reports, per 2022 CBC Chapter 17A and DSA IR 17-4, 17-5 and 17-6, for mortar mixes required to comply with property specification.
2. Include test reports, per 2022 CBC Chapter 17A and DSA IR 17-4, 17-5 and 17-6, for grout mixes required to comply with compressive strength requirement.

1.6 QUALITY ASSURANCE

A. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, through one source from a single manufacturer for each product required.

B. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from a single manufacturer for each cementitious component and from one source or producer for each aggregate.

C. Sample Panels: Build sample panels to verify selections made under sample submittals and to demonstrate aesthetic effects. Comply with requirements in Division 1 Section "Quality Requirements" for mockups.

1. Build sample panels for each type of exposed unit masonry construction in sizes approximately 48 inches long by 48 inches high.
2. Where masonry is to match existing, erect panels adjacent and parallel to existing surface.
3. Clean exposed faces of panels with masonry cleaner indicated.
4. Protect approved sample panels from the elements with weather-resistant membrane.
5. Approval of sample panels is for color, texture, and blending of masonry units; relationship of mortar and sealant colors to masonry unit colors; tooling of joints; aesthetic qualities of workmanship; and other material and construction qualities specifically approved by Architect in writing.
    a. Approval of sample panels does not constitute approval of deviations from the Contract Documents contained in sample panels unless such deviations are specifically approved by Architect in writing.

D. Comply with applicable provisions of the following codes, specifications, and documents:
1. California Building Code (2022 CBC) as adopted by the Division of the State Architect, Structural Safety Section. Specifically, Chapter 17A as it relates to this project.
2. DSA Interpretation of Regulations (IR) 17-1 through 17-7.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.

B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

D. Deliver preblended, dry mortar mix in moisture-resistant containers designed for lifting and emptying into dispensing silo. Store preblended, dry mortar mix in delivery containers on elevated platforms, under cover, and in a dry location or in a metal dispensing silo with weatherproof cover.

E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.8 PROJECT CONDITIONS

A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.

1. Extend cover a minimum of 24 inches down both sides and hold cover securely in place.

B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least 3 days after building masonry walls or columns.

C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.

1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
2. Protect sills, ledges, and projections from mortar droppings.
3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.

D. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1

PART 2 - PRODUCTS

2.1 MASONRY UNITS, GENERAL

A. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to exceed tolerances and to contain chips, cracks, or other defects exceeding limits stated in the standard. Do not uses units where such defects, including dimensions that vary from specified dimensions by more than stated tolerances, will be exposed in the completed Work or will impair the quality of completed masonry.

2.2 CONCRETE MASONRY UNITS (CMUs)

A. Shapes: Provide shapes indicated and as follows:

1. Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.
2. Provide square-edged units for outside corners, unless otherwise indicated.
3. Provide single open-end units.

B. Concrete Masonry Units: ASTM C 90

1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 13 f'm =2000 psi.
2. Weight Classification: Medium weight
3. Size (Width): Manufactured to dimensions 3/8 inch less than nominal dimensions.
4. Exposed Faces: Match Architect's samples and the color of the masonry units at the newer Gymnasium Building on the campus (Air Vol Block Inc. Color #60B620C, split-faced units to exterior, or precision units below BFF, at top course of exterior walls and all interior walls).

2.3 MORTAR AND GROUT MATERIALS

A. Portland Cement: ASTM C 150, Type II. Provide natural color or white cement as required to produce mortar color indicated.

B. Hydrated Lime: ASTM C 207 Type S.

C. Portland Cement-Lime Mix: Packaged blend of portland cement complying with ASTM C 150, Type I or Type III, and hydrated lime complying with ASTM C 207, Type S.

D. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes. Use only pigments with a record of satisfactory performance in masonry mortar.

1. Products:

a. Bayer Corporation, Industrial Chemicals Div.; Bayferrox Iron Oxide Pigments.
b. Davis Colors; True Tone Mortar Colors.
c. Solomon Grind-Chem Services, Inc.; SGS Mortar Colors.

E. Aggregate for Mortar: ASTM C 144.

1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
2. For joints less than 1/4 inch thick, use aggregate graded with 100 percent passing the No. 16 sieve.
3. Colored-Mortar Aggregates: Natural sand or crushed stone of color necessary to produce required mortar color.

F. Aggregate for Grout: ASTM C 404.

G. Water: Potable.

2.4 REINFORCEMENT

A. Uncoated Steel Reinforcing Bars: ASTM A 615, Grade 60.

2.5 MISCELLANEOUS ANCHORS

A. Anchor Bolts: Headed steel bolts complying with ASTM A 307, Grade A with ASTM A 563 hex nuts and, where indicated, flat washers; hot-dip galvanized to comply with ASTM A 153, Class C; of dimensions indicated.

2.6 MISCELLANEOUS MASONRY ACCESSORIES

A. Compressible Filler: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene or PVC.

B. Preformed Control-Joint Gaskets: Made from styrene-butadiene-rubber compound, complying with ASTM D 2000, Designation M2AA-805 or PVC, complying with ASTM D 2287, Type PVC-65406 and designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.

C. Reinforcing Bar Positioners: Wire units designed to fit into mortar bed joints spanning masonry unit cells with loops for holding reinforcing bars in center of cells. Units are formed from 0.142-inch steel wire, hot-dip galvanized after fabrication. Provide units with either two loops or four loops as needed for number of bars indicated.

2.7 MASONRY CLEANERS

A. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.

2.8 MORTAR AND GROUT MIXES

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.

1. Do not use calcium chloride in mortar or grout.

2. Limit cementitious materials in mortar to Portland cement, mortar cement, and lime.

B. Mortar for Unit Masonry: Comply with ASTM C 270 Property Specification. Provide type S mortar for applications stated unless another type is indicated
1. Measure materials in calibrated devices, shovels are not acceptable.
2. Comply with ASTM C 144 for aggregates.
3. Lime shall be the last material added to the mixer.

C. Pigmented Mortar: Use colored cement product or select and proportion pigments with other ingredients to produce color required. Do not add pigments to colored cement products.

D. Grout for Unit Masonry: Comply with ASTM C 476, specify by proportion requirements or property requirements.

1. Use grout of type indicated.
2. Provide grout with a slump of 8 to 11 inches as measured according to ASTM C 143.
3. Comply with ASTM C 404 for aggregates.

2.9 SOURCE QUALITY CONTROL

A. Owner will engage a qualified independent testing agency to perform source quality-control testing indicated below:

1. Payment for these services will be made by Owner.
2. Retesting of materials failing to comply with specified requirements shall be done at Contractor's expense.

B. Concrete Masonry Unit Test: For each type of unit furnished, per ASTM C 140.

PART 3 - **EXECUTION**

3.1 EXAMINATION

A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.

1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of work.
2. Verify that foundations are within tolerances specified.
3. Verify that reinforcing dowels are properly placed.

B. Before installation, examine rough-in and built-in construction for piping systems to verify actual locations of piping connections.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. Thickness: Build cavity and composite walls and other masonry construction to full thickness shown. Build single-wythe walls to actual widths of masonry units, using units of widths indicated.

B. Build chases and recesses to accommodate items specified in this and other Sections.

C. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match the construction immediately adjacent to opening.

D. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

E. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures. Mix units from several pallets or cubes as they are placed.

F. Comply with construction tolerances in ACI 530.1 602 and with the following:

1. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet or 1/2 inch maximum.
2. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet or 1/2 inch maximum.
3. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet 1/4 inch in 20 feet or 1/2 inch maximum.
4. For exposed bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch. Do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch.
5. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch . Do not vary from adjacent bed-joint and head-joint thicknesses by more than 1/8 inch .
6. For faces of adjacent exposed masonry units, do not vary from flush alignment by more than 1/16 inch except due to warpage of masonry units within tolerances specified for warpage of units.
7. For exposed bed joints and head joints of stacked bond, do not vary from a straight line by more than 1/16 inch from one masonry unit to the next.

3.3 LAYING MASONRY WALLS

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.

B. Thoroughly clean surfaces to be in contact with mortar or grout. Lay units with open end against closed end or open end against open end. Do not lay units with closed end against closed end. Units may be sawcut open to comply with the above requirement.

C. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.

D. Lay concealed masonry with all units in a wythe in running bond Bond and interlock each course of each wythe at corners. Do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.

E. Stopping and Resuming Work: Stop work by racking back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.

F. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.

G. Fill space between steel frames and masonry solidly with mortar, unless otherwise indicated.

H. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath, wire mesh, or plastic mesh in the joint below and rod mortar or grout into core.

I. Fill cores in hollow concrete masonry units with grout 24 inches under bearing plates, beams, lintels, posts, and similar items, unless otherwise indicated.

3.4 MORTAR BEDDING AND JOINTING

A. Lay hollow concrete masonry units as follows:

1. With face shells fully bedded in mortar and with head joints of depth equal to bed joints.
2. With webs fully bedded in mortar in all courses of piers, columns, and pilasters.
3. With webs fully bedded in mortar in grouted masonry, including starting course on footings.

B. Cut joints flush for masonry walls to receive plaster or other direct-applied finishes (other than paint), unless otherwise indicated.

3.5 CONTROL AND EXPANSION JOINTS

A. General: Install control and expansion joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.

1. Form control joints in concrete masonry

3.6 REINFORCED UNIT MASONRY INSTALLATION

A. Temporary Formwork and Shores: Construct formwork and shores as needed to support reinforced masonry elements during construction.

1. Construct formwork to provide shape, line, and dimensions of completed masonry as indicated. Make forms sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.
2. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other temporary loads that may be placed on them during construction.

B. Grouting: Do not place grout until entire height of masonry to be grouted has attained enough strength to resist grout pressure.

1. Prior to grouting, clean the grout space to remove mortar projections greater than ½-inch, mortar droppings, or other foreign material. Align vertical cells in masonry units to provide a minimum of 3 inches by 3 inches clear grout space.
2. Control grout materials and water content to provide adequate fluidity for placement without segregation of the constituents and mix thoroughly. When grout pour heights exceed 2 feet, include a high-lift grouting admixture in the grout mix.
3. Grout all cells solid. Maximum grout pour height is 4 feet (Low Lift Grouting in accordance with CBC 2104A.6.1.1.2) unless the grouting procedures comply with CBC 2104A.6.1.1.3 and the Division of the State Architect's Interpretation of Regulations Document IR 21-2 "High Lift Grouting Method".
4. Consolidate grout by mechanical vibration during placement before loss of plasticity in a manner to fill the grout space.
5. Between grout pours, provide a horizontal construction joint formed by stopping all wythes at the same elevation and with the grout stopping a minimum of 1½ inches below the mortar joint except at the top of the wall. Where bond beams occur, stop the grout pour a minimum of ½-inch below the top of the masonry.
6. Complete the grouting of any section with no interruptions greater than one hour.

3.7 FIELD QUALITY CONTROL

A. Inspectors: Owner will engage qualified independent inspectors to perform inspections and prepare reports. Allow inspectors access to scaffolding and work areas, as needed to perform inspections.

1. Place grout only after inspectors have verified compliance of grout spaces and grades, sizes, and locations of reinforcement.
2. Comply, and facilitate the compliance of the special inspector, with DSA IR 17-4 and IR 17-6.

B. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections indicated below and prepare test reports:

1. Retesting of materials failing to comply with specified requirements shall be done at Contractor's expense.
2. Comply, and facilitate the compliance of the testing laboratory, with DSA IR 17-4 and IR 17-5.

C. Testing Frequency: One set of tests for each 5000 sq. ft. of wall area or portion thereof.

D. Concrete Masonry Unit Test: For each type of unit provided, per ASTM C 140.

E. Mortar Test (Property Specification): For each mix provided, per CBC Standard 21-16. Test mortar for compressive strength.

F. Grout Test (Compressive Strength): For each mix provided, per CBC Standard 21-18.

3.8 REPAIRING, POINTING, AND CLEANING

A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.

B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.

C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.

D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:

1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
3. Protect adjacent stone and non-masonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
5. Clean masonry with a proprietary acidic cleaner applied according to manufacturer's written instructions.
6. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2A applicable to type of stain on exposed surfaces.

3.9 MASONRY WASTE DISPOSAL

A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.

B. Waste Disposal as Fill Material: Dispose of clean masonry waste, including excess or soil-contaminated sand, waste mortar, and broken masonry units, by crushing and mixing with fill material as fill is placed.

1. Crush masonry waste to less than 4 inches in each dimension.
2. Mix masonry waste with at least two parts of specified fill material for each part of masonry waste. Fill material is specified in Division 2 Section "Earthwork."
3. Do not dispose of masonry waste as fill within 18 inches of finished grade.

C. Excess Masonry Waste: Remove excess clean masonry waste that cannot be used as fill, as described above, and other masonry waste, and legally dispose of off Owner's property.

END OF SECTION 04 20 00

SECTION 05 12 00 - STRUCTURAL STEEL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SECTION INCLUDES

A. Provide labor, equipment, supervision and structural steel as shown on the Drawings, specified herein and as needed for a complete and proper installation.

1.3 RELATED SECTIONS

A. Section 032000 - Reinforcing Steel

B. Section 033000 - Cast-in-Place Concrete

C. Section 053100 - Metal Deck

D. Section 099100 – Painting

1.4 REFERENCES

A. The latest editions of specifications and standards referenced herein, published by the following organizations, apply to the Work of this Section only to the extent specified by the reference.

AISC American Institute of Steel Construction.
ASTM American Society for Testing and Materials.
AWS American Welding Society.
SSPC Steel Structures Painting Council.

1.5 SUBMITTALS

A. General: Submit the following according to Conditions of Contract and Division 1 Specifications Sections.

B. Refer to “Submittal Requirements and Schedules” Article at the end of this Section for required submittals.

1.6 QUALITY ASSURANCE

A. Fabricate structural steel members and assemblies in accordance with AISC Code of Standard Practice and Specifications. Company performing the Work of this Section shall have a least five years of satisfactory experience in fabricating structural steel.

B. Qualification of Welders: Qualify welding procedures and welding operators in accordance with AWS D1.1, including the installation of welded studs & metal deck. Provide certifications that welders to be employed have satisfactorily passed AWS qualification tests within the past 12 months. If recertification of welders is required, retesting will be the Contractor’s responsibility.

C. Codes and Standards: Perform Work in compliance with applicable requirements of governing authorities having jurisdiction.
1. Chapter 22A of the 2022 California Building Code including all applicable State of California Amendments (CBC).

D. Erector: Company specializing in the Work for this Section shall have at least 5 years of satisfactory experience in the erection of structural steel.

E. Testing and Inspections: Comply with Chapter 22A of the 2022 CBC, Section 01 4100 Testing and Inspection and as noted on the Structural Drawings.
1. Contractor shall notify Owner’s Testing and Inspection Service at least 48 hours prior to shop welding and prior to field welding of structural steel. Coordinate and provide access to all locations for testing and inspection of structural steel Work.

1.7 DELIVERY, STORAGE AND PROTECTION

A. Delivery and Storage:
1. Deliver members and materials to the job site properly marked to identify the location for which they are intended and in time to insure uninterrupted progress of the construction.
2. Use markings corresponding to markings shown on the approved Shop Drawings.
3. Store materials in a manner to preclude damage and permit ready access for inspection and identification of each shipment. Store steel materials, either plain or fabricated, above the ground upon platforms, pallets, skids, or other supports.
4. Keep materials free from dirt, grease, and other foreign matter, and protect from corrosion. Material showing evidence of damage will be rejected and shall be immediately removed from the site.

1.8 COORDINATION

A. Coordinate locations of items to be embedded in and/or attached to the Work of Sections 03 1000, 03 3000 and 05 3100.

PART 2 – PRODUCTS

2.1 GENERAL

A. Use only new and undamaged materials. Steel which in the opinion of the Architect is corroded or physically damaged shall not be incorporated in the construction.

B. Exposed Steel Work: Where steel surfaces are exposed to view in the finish construction, use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness. Remove such blemishes by grinding or by welding and grinding; before cleaning, treating and application of surface finishes.

2.2 MATERIALS

A. Structural steel wide flange shapes: ASTM A 992, Grade 50.

B. Angles, channels, plates, rods and bars: ASTM A36

C. Structural steel tubes: ASTM A 500, Grade B.

D. Structural steel pipe: ASTM A 53, Type E or S, Grade B.

E. Common Bolts and Nuts: ASTM A 325N. Provide hexagonal heads and nuts where exposed and where embedded in masonry.

F. Anchor bolts and Rods: ASTM F 1554

G. Automatic End Welded Studs: Studs shall be Nelson Granular Flux filled Shear Connectors or Anchor Studs, or an approved equal. Studs shall be manufactured of C-1015 cold rolled steel conforming to ASTM Specification A-108. When welding through deck, the stud diameter shall not be greater than 2.5 times the beam flange thickness. Comply with AWS D1.1.

H. Filler metal for welding: Meet the requirements of AWS D1.1. Electrodes shall be as recommended by their manufacturer for position and other conditions of actual use. Electrodes shall be E70 series.

I. Moment frame welding: Meet the requirements of AWS D1.8.

J. Primer: Manufacturer’s or fabricator’s standard, fast curing, lead free, universal modified alkyd

primer selected for good resistance to normal atmospheric corrosion, for compatibility with finish paint systems indicated and for capability to provide a sound foundation for field applied topcoats despite prolonged exposure, complying with performance requirements of Federal Specifications TT-P-645.

K. Grout: Non-shrink type, pre-mixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing additive, capable of developing a minimum compressive strength of 5,000 psi in 7 days.

L. Galvanize structural steel assemblies, members and connectors not permanently protected from weather and moisture per ASTM A 123.

M. Templates: Any commercial grade steel, not less than 10 gage.

N. Galvanizing Repair Compound: High zinc dust content galvanizing repair paint conforming to Mil. Spec DOD-P-21035A, hot applied zinc rich material or equal.

O. Reinforcing steel shall conform to Section 03 2000.

2.3 FABRICATION

A. Fabricate and assemble materials in the shop to the greatest extent possible. Shearing, flame cutting, and chipping shall be done carefully and accurately. Coordinate connection details where steel is connected to concrete and masonry. Verify lines, levels, and dimensions, where possible, just before commencing fabrication of connection details. Correct construction that does not fit. Schedule and coordinate construction under this Section with that specified elsewhere. When not otherwise indicated or specified, comply with application requirements of AISC “Specifications for Design, Fabrication and Erection of Structural Steel for Buildings”.

B. Before beginning fabrication or Work, wire-brush materials clean of loose mill scale and rust, and straighten by methods that will not injure the steel and so that they will comply with AISC tolerances.

C. Welded Connections: Make welded connections in accordance with AWS D1.1. Assemble and weld built-up sections by methods which will produce true alignment of axes without warp. Grind and dress smooth all welds exposed to view in the finish construction, so that the shape and profile of the item welded is preserved.

D. Automatic End-Welded Studs: The studs shall be automatically end welded in accordance with AWS D1.1 in such a manner as to provide complete fusion between the end of the stud and the plate. There shall be no porosity or evidence of lack of fusion between the welded end of the stud and the plate. The stud shall decrease in length during welding approximately 1/8" for 5/8" diameter studs and under, and 3/16" for stud diameters greater than 5/8" diameter. Welding shall be done only by qualified welders approved by the welding inspector.

E. Holes: Cut, drill, or punch holes at right angles to the surface of the metal. Do not cut or enlarge holes by burning. Holes may be enlarged by careful reaming. Holes in base or bearing plates shall be drilled. Holes shall be provided in members to permit connection the construction of other trades.
1. Material may be punched 1/16 inch larger than the nominal diameter of the bolt, whenever the thickness of metal is equal to or less than the diameter of the bolt plus 1/8 inch.

F. Templates: Fabricate individual templates for each and every assembly to be anchored to or embedded in concrete and/or masonry. Locate working centerlines of each template by drilling hole or deep center punch. Remove templates prior to erection of members.

2.4 SHOP PAINTING

A. General: Shop paint structural steel except galvanized members or those members or portions of members to be embedded in concrete or in masonry & grout. On embedded steel which is partially exposed, paint the exposed portion and the initial 2 inches of embedded areas only. Do not paint surfaces to be welded.

B. Surface Preparation: After inspection and before shipping, clean steelwork to be painted. Remove loose rust, loose mill scale and splatter, slag or flux deposits using power tool cleaning in accordance with SSPC SP-3.

C. Painting: Immediately after surface preparation, apply shop primer in accordance with manufacturer's instructions and at a rate to provide a dry film thickness of not less than 1.5 mils. Use painting methods which results in full coverage of joints, corners, edges and exposed surfaces, without drips, sags, etc.

2.5 GALVANIZING

A. General: All steel and ferrous metal items located on the exterior of the buildings, exposed to moisture and otherwise indicated to be galvanized shall be galvanized by the hot-dip process, meeting the requirements of ASTM A 123. All required hot-dip galvanizing shall be done after fabrication, in the largest sections possible. Items too large for available dip tanks shall be sprayed, by approved methods, with molten zinc to coating thickness of 0.003 inch to 0.004 inch.

B. Coating Weight: Weight of the Zinc coating per square foot of actual surface shall average not less than 2.0 ounces and no individual specimen shall be less than 1.8 ounces.

C. Repair of Coating: Restore shop galvanized metal necessitating field soldering or welding which in any manner removes original galvanizing, by using galvanizing repair compound in accordance with manufacturer's instructions.

PART 3 – EXECUTION

3.1 PREPARATION

A. Field measure and Templates: Secure field measurements required for proper and adequate fabrication and installation. Furnish templates for exact location of items to be embedded in concrete and/or masonry including instructions required for installation.

B. Temporary Shoring and Bracing: In accordance with California Code of Regulations (CCR), Title 8, design, provide temporary shoring, erection bracing and bracing members with connections of sufficient strength to bear imposed loads. Remove temporary members and connections when permanent members are securely in place and final connections are complete. Provide temporary guy lines to achieve proper alignment of structure as erection proceeds.

3.2 ERECTION

A. Setting Base and Bearing Plates: After the supported members have been plumbed, aligned and properly positioned, set base and bearing plates. Support plates on adjustable bolt supports or shims until grout has set. Pack grout solidly between bearing surfaces and bases or plates to ensure that no voids remain. Follow grout manufacturer's instructions.

B. Framing: Except as specified herein, erect framing in accordance with AISC Code of Standard Practice and the 2019 CBC. Plan and layout framing so that cutting will not be required. Erect construction plumb, square, and true to line, level, and position indicated within tolerances established in the AISC Code of Standard Practice.

C. Holding and Protection: In assembling and during welding hold the component parts with sufficient clamps or other adequate means to keep parts straight and in close contact. In welding, take precautions to minimize "lock-up" stress and distortion due to heat. In wind, perform welding only after adequate wind protection is furnished and set up.

D. Connections: Bolt field connections except where welding is indicated. Perform welding as specified for shop welding.

E. On exposed construction, remove erection bolts, temporary welds, run-off plates and backing strips. Fill erection bolt holes with plug welds and grind smooth.

F. Testing shall comply with Section 01 4100.

Section continued on the next page

3.3 SUBMITTAL REQUIREMENTS AND SCHEDULE

A. Include this form with submittals of this Specification Section, unless a substitution product is being proposed, in which case refer to Division 1 Section "Substitutions" for Substitution requests.

Contractor's Initials — Contractor is to acknowledge with initials each submittal included. Attach a letter of explanation for each submittal not included.

_____ All submitted products are as specified.

B. SUBMITTAL SCHEDULE:

_____ 1. Fabricator's Qualifications

_____ 2. Erector's Qualifications

_____ 3. Mill test certificates including heat or melt numbers for each type and size of steel used in the Work.

_____ 4. Shop and erection drawings including complete details and schedules for fabrication, shop and field assembly of members and erection bracing. Should more than one submittal be required, late submittals shall clearly identify materials added or revised subsequent to previous submittal.

a. Shop drawings and fabricated assemblies and members shall be properly marked to identify their location on site.

b. Indicate each weld by AWS symbol, size, type and length of weld.

c. Provide setting drawings, templates and directions for installing anchor bolts and other steel assemblies into concrete and/or masonry.

d. Identify shop drawing details by reference to sheet and detail number of the Drawings.

_____ 5. Welder's Certificates: Certify welders employed on the Work, verify AWS qualification within the previous 12 months.

END OF SECTION 05 1200

SECTION 06 10 00 – ROUGH CARPENTRY

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SECTION INCLUDES

A. Provide all labor, material, equipment and installation to complete framing and sheathing of interior walls and partitions as shown and specified.

1.3 RELATED SECTIONS

061600 – Sheathing

1.4 REFERENCES

A. The latest editions of specifications and standards referenced herein and published by the following organizations apply to the Work of this Section only to the extent specified by the reference.

APA	American Plywood Association - Visual Inspection
ASTM	American Society for Testing and Materials.
AWPA	American Wood Preservers Association
DFPA	Douglas Fir Plywood Association
ICC	International Code Council
PS	Public Standards of the U.S. Department of Commerce, Bureau of Standards
CBC STDS	2022 California Building Code Standards
WCLIB	West Coast Lumber Inspection Bureau
WWPA	Western Wood Products Association

1.5 SUBMITTALS

A. General: Submit the following according to Conditions of Contract and Division 1 Specifications Sections.
   1. Product data and current ICC Evaluation Service Reports for attachment accessories.
      a. Framing Devices and framing connectors
      b. Gun nails

1.6 QUALITY ASSURANCE

A. Codes and Standards: Perform Work in compliance with applicable requirements of governing authorities having jurisdiction.

1. Chapter 23 of the 2022 California Building Code (CBC).
2. ANSI/AF&PA NDS-2018 National Design Specification for Wood Construction.
3. Standard Grading Rules No. 17 of the WCLIB or the Standard Grading Rules of the WWPA. Lumber to have visible grade stamp of an agency certified by the WCLIB.

1.7 COORDINATION

A. Coordinate Work of this Section with Work of other Sections to be attached to, or built into, wood framing.

PART 2 – PRODUCTS

2.1 LUMBER

A. Moisture content: The maximum moisture content of framing lumber shall not exceed 19% just prior to enclosing or covering framing with plywood, gypsum wallboard and/or plaster. To ensure compliance, lumber up to 2 inch thick should be seasoned to a moisture content of 19% or less and be stamped “S-Dry”. Lumber over 2 inch thick may be shipped unseasoned and stamped “S-Green”.

B. Structural lumber shall be S4S stress-marked Douglas Fir-Larch, manufactured and graded in accordance with WCLIB or WWPA, with minimum grades as follows unless noted otherwise:

1.	Joists & Rafters	No. 1
2.	4x & 6x Beams/Headers	No. 1 or better
3.	Wall Studs	No. 1
4.	Blocking, stripping & misc.	No. 2

C. Grade stamp: Provide lumber with each piece factory-marked with grade stamp of inspection agency evidencing compliance with grading rule requirements and identifying grading agency, grade species, moisture content at time of surfacing, and mill.

2.2 ACCESSORY MATERIALS

A. All Nails shall be common wire nails with dimensions complying with CBC Table 2304.9.1, manufacture shall conform to Fed. Spec, FF-N-1-1 and shall be hot-dipped galvanized for exterior locations, high humidity locations and for treated wood; plain finish for other interior locations; size and type to suit application.

1. Box nails and/or “Sinker” nails are not acceptable for Work shown and/or detailed on the

Structural Drawings.

B. Bolts, Nuts and Washers conforming to ASTM A-307 shall be hot-dipped galvanized for exterior locations, high humidity locations and treated wood; plain finish for other interior locations.

C. Anchor Bolts: ASTM A 307, non-headed type.

D. Lag Screws, Lag Bolts, Pins and Wood Screws: Sized to suit application: hot-dipped galvanized for exterior locations, high humidity locations and treated wood; plain finish for other interior locations. Comply with NDS Section 11.1.3.

E. Framing connectors: current ICC Evaluation Services Report, sized and profiled to suit application; hot-dipped galvanized finish, manufactured by Simpson Strong-Tie Company, KC Metals, or approved equal.

F. Gun Nails: Use Common Nails or current ICC Evaluation Services Report special gun nails of the same wire diameter and length as common nails specified on the Drawings. Box nails and/or “Sinker” nails are not acceptable for Work shown on the Structural Drawings.

G. Drypack: Cement/sand drypack composed of one part cement to 3 parts sand. Dry mix first then add with only enough water to hold the mix together. Drypack required under sills as noted on the Drawings.

2.3 WOOD TREATMENT

A. Wood Preservative (Pressure Treatment): Chromated zinc chloride or Wolman salts for pressure treated members.

B. Pressure treatment of Douglas Fir-Larch plates, nailers, ledgers and other exposed wood structures, shall be in accordance with the AWPA’s standards for the purchase and preservation of treated timber, with a retention of a least 0.35 lb. Wolman salts, 0.75 lb chromated zinc chloride per cubic feet of lumber, or 0.30 lb. per cubic foot of Pentachlorophenol type “C” light solvent. In exposed conditions, the incising of the lumber shall be waived.

1. See Architectural Drawings for treatment of trellis members.

C. Wood Preservative (Surface Application): Clear, manufactured by Woodlife, “Res” or equal.

PART 3 – EXECUTION

3.1 WOOD TREATMENT

A. Shop pressure treat and deliver to the site ready for installation all wood materials requiring pressure impregnated preservatives.

B. Treat site-sawn ends and holes in pressure treated lumber.
   1. Apply preservative treatment in accordance with manufacturer's instruction.
   2. Allow site applied preservative to cure prior to erecting members.

3.2 FRAMING

A. Layout, cutting and installation of framing shall be under the continuous supervision of a full-time carpenter foreman experienced in all phases of framing construction and exposed architectural framing required for the Work of this Section and on the Contract Drawings.

B. Structural members shall not be cut for pipes, conduits, ducts, etc., unless specifically noted or detailed on the Structural Drawings.

C. Erect wood framing members true to lines and levels. Do not deviate from true alignment more than 1/4 inch. Install simple span members with crown up.

D. Space framing members at 16 inches on center unless otherwise noted on the Drawings.

E. Construct members of continuous pieces of longest possible lengths except as noted on the Drawings.

F. Holes in wood for bolts shall be drilled 1/32" to 1/16" larger than the diameter of the bolt.

G. Number of fasteners shall be as indicated on the Drawings or as noted in the ICC Evaluation Report where number of fasteners are not shown on the Drawings.

H. Sheet metal framing connectors shown on the Drawings shall be Simpson connectors as manufactured by the Simpson Strong-Tie Company, Inc., Superspeed Connectors as manufactured by the KC Metals company or equal.

I. Bolts shall have standard cut washers under heads and/or nuts where in contact with wood. Bolt threads shall not bear on wood.

J. Lag bolts, lag screws and wood screws shall be screwed (not driven) into wood members. In placing lag screws or wood screws in wood, a hole of the same diameter and depth of "the solid shank" shall be bored after which the hole with a diameter equal to the diameter of the screw at the root of the thread shall be continued to a depth equal to the threaded screw length portion. Provide cut washers under the heads of lag bolts/lag screws where in contact with wood.

K. Bolts, lag screws and wood screws shall be re-tightened prior to the application of drywall, plywood, plaster, etc.

L. Drive nails perpendicular to grain of wood in lieu of toenailing, where feasible.

M. For conditions not covered on the Drawings, provide penetration into the piece receiving the

point of not less than 1/2 the length of the common nail or spike, provided, however, that 16d nails may be used to connect two pieces of two inch (nominal) thickness.

3.4 CLEAN-UP

A. Clean up leftover materials of this Section and legally dispose off site. Dispose of pressure-treated wood in an authorized disposal area. Burning of materials on the Site is prohibited. Do not bury material and/or wood of any type on the job site.

END OF SECTION 06 1000

SECTION 06 16 00 – SHEATHING

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SECTION INCLUDES

A. Provide all labor, material, equipment and installation to complete framing and sheathing of roof overlay, top of interior lids, mezzanine flooring, stairs and wall paneling in electrical and communications rooms as shown and specified.

1.3 RELATED SECTIONS

Section 06 1000 – Rough Carpentry

1.4 REFERENCES

A. The latest editions of specifications and standards referenced herein and published by the following organizations apply to the Work of this Section only to the extent specified by the reference.

APA	American Plywood Association - Visual Inspection
ASTM	American Society for Testing and Materials.
AWPA	American Wood Preservers Association
DFPA	Douglas Fir Plywood Association
ICC	International Code Council
PS	Public Standards of the U.S. Department of Commerce, Bureau of Standards
CBC STDS	2022 California Building Code Standards
WCLIB	West Coast Lumber Inspection Bureau
WWPA	Western Wood Products Association

1.5 SUBMITTALS

A. General: Submit the following according to Conditions of Contract and Division 1 Specifications Sections.

B. Product data and current ICC Evaluation Service Reports for attachment accessories.
   1. Framing Devices and framing connectors
   2. Gun nails.

C. Environmental Submittal:
   Reference Standard: U.S. Green Building Council (USGBC) LEED Reference Guide for Green Building Design and Construction (NC), 2009 Edition.

   1. LEED Credit MR 4: Product Data for products having recycled content, documentation indicating percentages by weight of post-consumer and pre-consumer recycled content.

   2. LEED Credit IEQ 4.4: Provide documentation that all composite wood and agrifiber products including core materials and all laminating adhesives, on site or shop applied, contain no added urea-formaldehyde resins.

1.6 QUALITY ASSURANCE

A. Codes and Standards: Perform Work in compliance with applicable requirements of governing authorities having jurisdiction.
   1. Chapter 23 of the 2022 California Building Code (CBC).
   2. ANSI/AF&PA NDS-2018 National Design Specification for Wood Construction.
   3. Standard Grading Rules No. 17 of the WCLIB or the Standard Grading Rules of the WWPA. Lumber to have visible grade stamp of an agency certified by the WCLIB.
   4. Structural plywood: DOC Product Standard PS 1. Plywood shall be grade marked by DFPA, TECO, APA or PTL.

B. Plywood Machine Nailing: The use of machine nailing is subject to a satisfactory jobsite demonstration of each Project and the approval by the Architect and the Project Inspector. Approval is subject to continued satisfactory performance. If nail heads penetrate the outer ply more than would be normal for a hand hammer or if minimum allowable edge distances are not maintained, the performance of this application method will be deemed unsatisfactory.

1.7 COORDINATION

A. Coordinate Work of this Section with Work of other Sections to be attached to, or built into, wood framing.

PART 2 – PRODUCTS

2.1 SHEET MATERIALS

A. Plywood shall conform to:

1. All roof, floor and wall sheathing shall be APA rated Structural I plywood of the thickness shown on the Structural Drawings.

B. Grade stamp: Provide lumber with each piece factory-marked with grade stamp of inspection agency evidencing compliance with grading rule requirements and identifying grading agency, grade species, moisture content at time of surfacing, and mill.

C. Environmental Requirement: All composite wood and agrifiber products including core materials and all laminating adhesives, on site or shop applied, must contain no added urea-formaldehyde resins.

2.2 ACCESSORY MATERIALS

A. All nails shall be common wire nails per ASTM F1667 with dimensions complying with CBC Table 2304.9.1, manufacture shall conform to Fed. Spec, FF-N-1-1 and shall be hot-dipped galvanized for exterior locations, high humidity locations and for treated wood; plain finish for other interior locations; size and type to suit application.

1. Box nails and/or “Sinker” nails are not acceptable for Work shown and/or detailed on the Structural Drawings.

B. Framing connectors: current ICC Evaluation Services Report, sized and profiled to suit application; hot-dipped galvanized finish, manufactured by Simpson Strong-Tie Company, KC Metals, or approved equal.

C. Gun Nails: Use Common Nails or current ICC Evaluation Services Report special gun nails of the same wire diameter and length as common nails specified on the Drawings. Box nails and/or “Sinker” nails are not acceptable for Work shown on the Structural Drawings.

2.3 WOOD TREATMENT

A. Wood Preservative (Pressure Treatment): Chromated zinc chloride or Wolman salts for pressure treated members.

B. Wood Preservative (Surface Application): Clear, manufactured by Woodlife, “Res” or equal.

PART 3 – EXECUTION

3.1 FRAMING

A. Layout, cutting and installation of framing shall be under the continuous supervision of a full-time carpenter foreman experienced in all phases of framing construction and exposed architectural framing required for the Work of this Section and on the Contract Drawings.

B. Structural members shall not be cut for pipes, conduits, ducts, etc., unless specifically noted or detailed on the Structural Drawings.

C. Erect wood framing members true to lines and levels. Do not deviate from true alignment more than 1/4 inch. Install simple span members with crown up.

D. Construct members of continuous pieces of longest possible lengths except as noted on the Drawings.

E. Number of fasteners shall be as indicated on the Drawings or as noted in the ICC Evaluation Report where number of fasteners are not shown on the Drawings.

F. Sheet metal framing connectors shown on the Drawings shall be Simpson connectors as manufactured by the Simpson Strong-Tie Company, Inc., Superspeed Connectors as manufactured by the KC Metals company or equal.

G. Drive nails perpendicular to grain of wood in lieu of toenailing, where feasible.

H. For conditions not covered on the Drawings, provide penetration into the piece receiving the point of not less than 1/2 the length of the common nail or spike, provided, however, that 16^{d} nails may be used to connect two pieces of two inch (nominal) thickness.

3.2 PLYWOOD SHEATHING

A. Plywood sheathing shall be laid/placed with face grain perpendicular to supports. Secure plywood sheets over firm bearing with end joints staggered.

1. Provide a 1/8 inch gap between plywood edges for wall sheathing for expansion and contraction. Do not force panels into place.

2. Sheathing: Provide 3x flat edge blocking for unsupported edges.

B. Plywood sheathing shall be nailed with common wire nails spaced at 3/8" from all edges. Refer to the Drawings for nail size and spacing requirements for all plywood sheathing.

C. Use plywood panels larger than eight square feet and greater than 24" in the least dimension.

3.4 CLEAN-UP

A. Clean up leftover materials of this Section and legally dispose off site. Dispose of pressure-treated wood in an authorized disposal area. Burning of materials on the Site is prohibited. Do not bury material and/or wood of any type on the job site.

END OF SECTION 06 1100

SECTION 07 5423 - KEE THERMOPLASTIC MEMBRANE ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Single-Ply Thermoplastic Membrane Roofing
2. Thermoplastic Clad Flashing Metal
3. Flexible Membrane Base Flashings
4. Roofing Membrane Expansion Joints
5. Counter Flashings
6. Accessories

B. Related Requirements:

1. Section 06 1000 "ROUGH CARPENTRY"

1.2 REFERENCES

A. ASTM D412 - Standard Test Methods for Vulcanized Rubber and The Thermoplastic Rubbers and Thermoplastic Elastomers-Tension.

B. ASTM D 6754 – 02 Standard Specification for Ketone Ethylene Ester (KEE) Sheet Membranes.

C. ASTM D624 - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastics Elastomers.

D. ASTM D746 - Standard Test Method for Brittleness Temperature of Plastic Elastomers by Impact.

E. ASTM D1004 - Standard Test Method for Initial Tear Resistance of Plastic Film.

F. ASTM D1004 - Standard Terminology Relating to Roofing, Waterproofing, and Bituminous Materials.

G. ASTM E96 - Standard Test Method for Water Vapor Transmission

H. ASTM E903 - Standard Test Method for Solar Absorption, Reflectance, and Transmission of Materials Using Integrating Spheres.

I. ASTM E 108 - Standard Test Methods for Fire Test of Roof Coverings

J. National Roofing Contractors Association (NRCA): Roofing and Waterproofing Manual.

K. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual.

L. Underwriters Laboratories, Inc. (UL): Fire Hazard Classifications.

M. Warnock Hersey (WH): Fire Hazard Classifications.

N. ANSI-SPRI ES-1 Wind Design Standard for Edge Systems used with Low Slope Roofing Systems.

O. ASCE 7, Minimum Design Loads for Buildings and Other Structures

P. UL - Fire Resistance Directory.

Q. CRCC – Cool Roof Rating Council – Product Rating Program CRCC-1.

R. CBC – California Building Code, (CCR) California Code of Regulations, Title 24, Part 6.

1.3 SYSTEM DESCRIPTION

A. Thermoplastic Sheet Membrane Conventional Roofing System: KEE Single Ply Membrane Roofing System, Fully Adhered over DensDeck Prime coverboard mechanically attached to the wood deck with approved plates and fasteners, With Heat Welded Seams.

1.4 DESIGN / PERFORMANCE REQUIREMENTS

A. Perform work in accordance with all federal, state and local codes.

B. Design Requirements:
   1. Uniform Wind Uplift Load Capacity (Site Specific)
      a. Installed roof system shall withstand negative (uplift) design wind loading pressures complying with the following criteria.
         1) Design Code: ASCE 7-16, Method 2 for Components and Cladding.

C. UL 790 Class A Fire Hazard Classification.

D. Energy Star: Roof System shall comply with the initial and aged reflectivity required by the U.S. Federal Government's Energy Star program.

E. Roof system shall have been tested in compliance with the following codes and test requirements:
   1. Cool Roof Rating Council:
      a. CRRC Directory CRRC

F. Provide an installed single-ply roofing membrane and base flashing system that does not permit the passage of water and will withstand the wind uplift design pressure as indicated by site specific uplift calculations.

1.5 ACTION SUBMITTALS

A. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation instructions.

B. Design Pressure Calculations: Submit design pressure calculations for the roof area in accordance with ASCE 7 and local Building Code requirements. Include a roof system attachment analysis report, certifying the system's compliance with applicable wind load requirements before Work begins. Report shall be signed and sealed by a Professional Engineer registered in the State of the Project who has provided roof system attachment analysis for not less than 5 consecutive years.

C. Verification Samples: For each modified bituminous membrane ply product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

1.6 INFORMATIONAL SUBMITTALS

A. Provide notarized signature from manufacturer’s representative stating compliance with manufacturers required site inspections as outlined in Section 3.6.

B. Applicator Qualifications: Submit manufacturer’s written acceptance of applicator.

C. Sample warranties.

1.7 CLOSEOUT SUBMITTALS

A. Provide manufacturer's maintenance instructions that include recommendations for periodic inspection and maintenance of all completed roofing work.

B. Assist Owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on roofing and associated work.

C. Operation and Maintenance Data.

D. Warranty Documentation:

   1. Manufacturers' special warranties.
   2. Installer's special warranties.

1.8 QUALITY ASSURANCE

A. Perform Work in accordance with NRCA Roofing and Waterproofing Manual.

B. Manufacturer Qualifications: Company specializing in manufacturing products specified with documented ISO 9001 certification and minimum of twelve years of documented experience and must not have been in Chapter 11 bankruptcy during the last five years.

C. Installer Qualifications: Company specializing in performing Work of this section with minimum five years documented experience and a certified Pre-Approved Garland Contractor.

D. Installer's Field Supervision: Maintain a full-time Supervisor/Foreman on job site during all phases of roofing work while roofing work is in progress.

E. Product Certification: Provide manufacturer's certification that materials are manufactured in the United States and conform to requirements specified herein, are chemically and physically compatible with each other, and are suitable for inclusion within the total roof system specified herein.

F. Source Limitations: Obtain all components of roof system from a single manufacturer. Secondary products that are required shall be recommended and approved in writing by the roofing system Manufacturer. Upon request of the Architect or Owner, submit Manufacturer's written approval of secondary components in list form, signed by an authorized agent of the Manufacturer.

1.9 PRE-INSTALLATION MEETINGS

A. Convene minimum two weeks prior to commencing Work of this section

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

C. Inspect and make notes of job conditions prior to installation:
   1. Identify all outstanding issues in writing designating the responsible party for follow-up action and the timetable for completion.
   2. Installation of roofing system shall not begin until all outstanding issues are resolved to the satisfaction of the Architect.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store products in manufacturer's unopened packaging with labels intact until ready for installation in accordance with manufacturer instructions and recommendations

B. Store all roofing materials in a dry place, on pallets or raised platforms, out of direct exposure to the elements until time of application. Store materials at least 4 inches above ground level and covered with "breathable" tarpaulins.

C. Stored in accordance with the instructions of the manufacturer prior to their application or installation. Store roll goods on end on a clean flat surface except store KEE-Stone FB 60 rolls flat on a clean flat surface. No wet or damaged materials will be used in the application.

D. Store at room temperature wherever possible, until immediately prior to installing the roll. During winter, store materials in a heated location with a 50-degree F (10 degree C) minimum temperature, removed only as needed for immediate use. Keep materials away from open flame or welding sparks.

E. Avoid stockpiling materials on roofs without first obtaining acceptance from the Architect/Engineer.

F. Adhesive storage shall be between the range of above 50 degrees F (10 degree C) and below 80 degrees F (27 degree C). Area of storage shall be constructed for flammable storage.

1.11 COORDINATION

A. Coordinate Work with installing associated metal flashings as work of this section proceeds in accordance with manufacturer instructions and recommendations

1.12 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.13 WARRANTY

A. Upon completion of the work, provide the Manufacturer's written and signed 20-year Warranty.
   1. Warranty Period:
      a. 20 years from date of acceptance.

B. Installer is to guarantee all work against defects in materials and workmanship for a period indicated following final acceptance of the Work.
   1. Warranty Period:
      a. 5 years from date of acceptance.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis of Design: Garland Industries; 3800 E. 91st St., Cleveland, OH 44105. ASD. Toll Free: 800-321-9336. Phone: 216-641-7500. Fax: 216-641-0633.
   1. Local Representative:
      Jason Moronnolte
      (661) 889-0449
      jmoronnolte@garlandind.com

2.2 COMPONENTS

A. Membrane: 60-mil membrane, reinforced with a 7.5 oz knitted polyester fabric as manufactured by Garland Industries

B. Membrane Adhesive: SolarBrite VOC membrane adhesive. Shall Meet South Coast Air Quality Management District Rule 1168.

C. Thinner and Cleaner: AS recommended by adhesive manufacturer.

D. Insulation: Rigid foam insulation as specified

E. Barrier Board: DensDeck Prime Glass Matte gypsum protection board mechanically attached per ASCE 7-16

F. Flexible Membrane Base Flashing: Same material as field membrane.; white color.

G. Flashing Metal: SolarClad Metal

H. Counterflashing: Galvanized sheet metal, as specified

I. Prefabricated Control or Expansion Joint Flashing: KEE Membrane over polypropylene foam backing rod sized 1.5 x joint width. Seamed to roof membrane.

2.3 ACCESSORIES

A. Tapered Edge Strips: As specified

B. Roofing Nails and Screws: Galvanized or non-ferrous type, Size as required to suit application with compatible plates.

C. Sealants: As recommended by membrane manufacturer. Shall meet South Coast Air Quality Management District Rule 1168.

D. Sealing Mastic: One part gun grade butyl.

E. Strip Reglet Devices: Galvanized sheet metal as specified

F. Walkway Pads: PVC membrane with textured top surface finish, white color. 0.15 inch thick 2’x6’ wide x 50’-0” long.

G. Stack Boots: Prefabricated felixble molded KEE boot and collar for pipe stack penetrations through membrane and stainless steel clamping bands. 0.075 inch thick. Size to accommodate round and square tubes.

H. Wood Nailers: Pressure treated wood nailers as specified

I. Copper Sheet: ASTM B370, Temper H00 of H01, cold rolled copper sheet, 16oz/sq. ft.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. Inspect and approve the deck condition, slopes and fastener backing if applicable, parapet walls, expansion joints, roof drains, stack vents, vent outlets, nailers and surfaces and elements.

C. Verify that work penetrating the roof deck, or which may otherwise affect the roofing, has been properly completed.

D. If substrate preparation and other conditions are the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. General: Clean surfaces thoroughly prior to installation.
   1. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
   2. Fill substrate surface voids that are greater than 1/4 inch wide with an acceptable fill material.
   3. Roof surface to receive roofing system shall be smooth, clean, free from loose gravel, dirt and debris, dry and structurally sound.
   4. Wherever necessary, all surfaces to receive roofing materials shall be power broom and vacuumed to remove debris and loose matter prior to starting work.
   5. Do not apply roofing during inclement weather. Do not apply roofing membrane to damp, frozen, dirty, or dusty surfaces.
   6. Fasteners and plates for fastening components mechanically to the substrate shall provide a minimum pull-out capacity of 300 lbs. (136 k) per fastener. Base or ply sheets attached with cap nails require a minimum pullout capacity of 40 lb. per nail.
   7. Prime decks where required, in accordance with requirements and recommendations of the primer and deck manufacturer.

3.3 INSTALLATION - GENERAL

A. Install KEE membranes and flashings in accordance with manufacturer's instructions and with the recommendations provided by the National Roofing Contractors Association's Roofing & Waterproofing Manual and applicable codes.

B. General: Avoid installation of membranes at temperatures lower than 40-45 degrees F. When work at such temperatures unavoidable use the following precautions:
   1. Take extra care during cold weather installation and when ambient temperatures are affected by wind or humidity, to ensure adequate bonding is achieved between the surfaces to be joined. Use extra care at material seam welds and where adhesion of the

applied product to the appropriately prepared substrate as the substrate can be affected by such temperature constraints as well.

2. Unrolling of cold materials, under low ambient conditions must be avoided to prevent the likelihood of unnecessary stress cracking. Rolls must be at least 40 degrees F at the time of application. If the membrane roll becomes stiff or difficult to install, it must be replaced with roll from a heated storage area.

C. Commence installation of the roofing system at the lowest point of the roof (or roof area), working up the slope toward the highest point. Lap sheets shingle fashion so as to constantly shed water

3.4 INSTALLATION FULLY- ADHERED KEE MEMBRANE

A. Rolls of KEE Membrane are to be positioned and installed straight and snug but not taut. Stretching of the membrane places undue stress on the mechanical fasteners.

B. If using custom fabricated rolls, align the paneled rolls to stager the factory seams to prevent adjacent welds from falling on top of one another. Adjoining rolls shall overlap five inches and be properly shingled with the flow of water where possible. It is not uncommon and is acceptable for the factory laps to “buck” water.

C. The properly positioned membrane shall be fully adhered to the mechanically attached DensDeck Prime coverboard. Coverboard to be attached using approved Fasteners and Stress Plates installed through the structural decking. Solabrite membrane to be adhered using approved Solarbrite bonding adhesive

D. Fastener row spacing and intervals shall be established to resist design pressures, determined in compliance with procedures outlined within the current publication of ASCE Standard 7. Alternative designs may be determined using the criteria within Factory Mutual Research Loss Prevention Data.

E. Perimeter zone and corner zone enhancement is required on all mechanically fastened roofing systems. Perimeters and corners are defined as follows:
1. Perimeter: 10% of the width of the roof areas or 40% of the height of the roof area, whichever is less to a minimum of 4-ft. Perimeter zones run parallel to all external roof edges including those with parapet walls.
2. Corner zones are the square intersection of perimeters.
3. Projects having variable roof levels shall treat the outer boundary of each level as a perimeter. Internal expansion joints, firewalls or adjoining building walls greater than 4 feet are not considered perimeter areas.

F. Hot Air Welding:
1. Hot Air Welding: All field seams exceeding 10 feet in length shall be welded with an approved automatic welder.
2. All field seams must be clean and dry prior to initiating any field welding.
3. Remove foreign materials from the seams (dirt, oils, etc.) with Acetone or authorized alternative. Use CLEAN WHITE COTTON cloths and allow approximately five minutes for

solvents to dissipate before initiating the automatic welder. Do not use denim or synthetic rags for cleaning.

4. All welding shall be performed only by qualified personnel to ensure the quality and continuity of the weld. Contaminated areas within a seam will inhibit proper welding and will require a membrane patch

3.5 INSTALLATION KEE MEMBRANE FLASHINGS

A. Clean all vents, pipes, conduits, tubes, walls, and stacks to bare metal. All protrusions must be properly secured to the roof deck with approved fasteners. Remove and discard all lead, pipes and drain flashing. Flash all penetrations according to approved details.

B. Remove all loose and/or deteriorated cant strips and flashing.

C. Flash all curbs, parapets and interior walls in strict accordance with approved details.

D. All flashing shall be adhered to properly prepared, approved substrate(s) with either KEE Mastic or Bonding Adhesive applied in sufficient quantity to ensure total adhesion.

E. The base flange of all membrane flashing shall extend out on to the plane of the deck, beyond the wood nailers to a maximum width of 8 inches. Vertical flashing shall be terminated no less than 8 inch above the plane of the deck with approved termination bar and counter-flashing or metal cap flashing. When using Mastic as the adhesive, vertical wall flashing termination shall not exceed 30 inches without supplemental mechanical attachment of the flashing between the deck and the termination point of the flashing.

F. Complete all inside and outside corner flashing details with pre-formed corners or an approved field fabrication detail.

G. Probe all seams with a dull, pointed probe to ensure the weld has created a homogeneous bond.

H. Install penetration accessories in strict accordance with approved details. Ensure penetration accessories have not impeded in any way the working specification. (Refer to the related trade for the technical specification).

3.6 METAL FLASHINGS

A. All perimeter edge details are to be fabricated from SolarClad Metal.

B. Ensure all fascia extend a minimum of 2 inch lower than the bottom of the wood nailers.

C. Fasten all metal flashing to wood nailers or approved substrate with approved fasteners 8 inches on center.

D. Break and install SolarClad metal in accordance with approved details, ensuring proper attachment, maintaining 1/2 inch expansion joints and the installation of a minimum 2 inch bond breaker tape prior to sealing the joint.

E. Solidly weld SolarClad expansion joints with a 6 inch strip of membrane welded to the SolarClad, covering the bond breaker tape (cover plates are optional).

F. Roof Drains
1. Flash all roof drains in accordance with roof drain details.
2. Replace all worn or broken parts that may cut the membrane or prevent a watertight seal. This includes the clamping ring and strainer basket.
3. Replace all drain bolts or clamps used to hold the drain compression ring to the drain bowl.
4. Non-reinforced 60 mil membrane shall be used for flashing the drain assembly. Drain assemblies and basins or "sumps" must be free of any asphalt or coal tar pitch residue prior to installation.
5. The drain target sheet should be sized and installed to provide for a minimum of 12 inch of exposed 60 mil on all sides of the drain.

3.7 EXPANSION JOINTS

A. Flash all expansion joints in accordance with authorized details. Fasten all expansion joint material according to details. Ensure the expansion material has sufficient material to expand to the widest point in expansion without causing undue stress on the expansion joint material.

3.8 SEALANTS

A. Apply authorized sealant(s) to all surface mounted reglets and per project requirements. Sealant(s) are to shed water. Follow all manufacturer's instructions and installation guides.

B. Use primer when recommended by the manufacturer.

C. Sealants will require periodic maintenance by the building owner’s maintenance personnel.

3.9 TEMPORARY SEALS

A. At the end of each working day or at the sign of rain, install temporary, 100% watertight seal(s) where the completed new roofing adjoins the uncovered deck or existing roof surface.

B. The authorized roofing contractor shall create and maintain the temporary seal in such a manner to prevent water from traveling beneath the new and/or existing roof system.

C. The use of plastic roofing cement is permissible when sealing to an existing built up roof.

D. If water is allowed to enter beneath the newly completed roofing, the affected area(s) shall be removed and replaced at no additional expense to the building owner.

E. Prior to the commencement of work, cut out and remove all contaminated membrane, insulation, roof cement or sealant and properly dispose off site.

3.10 CLEANING

A. Clean-up and remove daily from the site all wrappings, empty containers, paper, loose particles and other debris resulting from these operations.

B. Remove asphalt markings from finished surfaces.

C. Repair or replace defaced or disfigured finishes caused by Work of this section.

3.11 PROTECTION

A. Provide traffic ways, erect barriers, fences, guards, rails, enclosures, chutes and the like to protect personnel, roofs and structures, vehicles and utilities.

B. Protect exposed surfaces of finished walls with tarps to prevent damage.

C. Plywood for traffic ways required for material movement over existing roofs shall be not less than 5/8 inch (16 mm) thick.

D. In addition to the plywood listed above, an underlayment of minimum 1/2 inch (13 mm) recover board is required on new roofing.

E. Special permission shall be obtained from the Manufacturer before any traffic shall be permitted over new roofing.

3.12 FIELD QUALITY CONTROL

A. Inspection: Provide manufacturer's field observations at minimum of (4) days per week. Provide a final inspection upon completion of the Work.
   1. Warranty shall be issued upon manufacturer's acceptance of the installation.
   2. Field observations shall be performed by a Sales Representative employed full-time by the manufacturer and whose primary job description is to assist, inspect and approve membrane installations for the manufacturer.
   3. Provide observation reports from the Sales Representative indicating procedures followed, weather conditions and any discrepancies found during inspection.
   4. Provide a final report from the Sales Representative, certifying that the roofing system has been satisfactorily installed according to the project specifications, approved details and good general roofing practice.

3.13 SCHEDULES

A. Thermoplastic cap (Ply) Sheet:
   1. SolarBrite KEE: 60 mil thermoplastic, ketone ethylene ester (KEE) roofing membrane with polyester scrim.
      a. Breaking Strength, ASTM D 751, Proc. B, strip
         1) 350 lbf. (1,557 N)

b. Tear Strength ASTM D 751
   1) 100 lbf. min. (445 N)
c. Elongation at Break (%), ASTM D 751, Proc. B, Strip
   1) 18.0%
d. Tensile Strength (PSI) ASTM D882; 8500

B. Surfacing:
   1. Flashing Cap (Ply) Sheet:
      a. SolarBrite KEE 60 Flashing: 60 mil thermoplastic, ketone ethylene ester (KEE) roofing membrane with polyester scrim.
         1) Breaking Strength, ASTM D 751, Proc. B, strip
            a) 350 lbf
         2) Tear Strength ASTM D 751
            a) 100 lbf. minumum.
         3) Elongation at Break (%), ASTM D 751, Proc. B, Strip
            a) 18.0%

END OF SECTION 07 5423

SECTION 07 6200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experience Installer who has completed sheet metal flashing and trim work similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.

B. Perform Work per SMACNA details and recommendations.

C. Mockups: Prior to installing sheet metal flashing and trim, construct mockups indicated to verify selections to demonstrate aesthetic effects as well as qualities of materials and execution. Build mockups to comply with the following requirements, using materials indicated for final unit of Work.

1. Locate large mockups on-site in the location and of the size indicated or, if not indicated, as directed by Architect.

a. Small mockups (samples) shall be delivered to Architect's office.

2. Notify Architect one week in advance of the dates and times when mockups will be constructed.
3. Construct mockups for the following type of sheet metal flashing and trim:

a. Flashing
b. All fabricated items.

4. Construct mockups in each required material (copper, aluminum, and galvanized steel) where more than one material is indicated for an item.

5. Obtain Architect's approval of mockups before start of final unit of Work.

6. Retain and maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.

a. Approved mockups in an undisturbed condition at the time of Completion may become part of the completed Work.

1.2 PROJECT CONDITIONS

A. Coordinate Work of this Section with interfacing and adjoining Work for proper sequencing of each installation. Ensure best possible weather resistance, durability of Work, and protection of materials and finishes.

PART 2 - MATERIALS

2.1 METALS

A. Galvanized Steel Sheet: ASTM A 526, G 90, commercial quality, or ASTM A 527,

G 90, lock-forming quality, hot-dip galvanized steel sheet with 0.20 percent copper, mill phosphatized where indicated for painting thickness as follows:

1. Galvanized steel is required for the following fabrications where indicated:

a. Flashing indicated on the drawings.

2.3 MISCELLANEOUS MATERIALS AND ACCESSORIES

A. Solder:

1. For Stainless Steel: ASTM B32, Grade Sn60, used with an acid flux.

B. Fasteners: Same metal as sheet metal flashing or other noncorrosive metal as recommended by sheet metal manufacturer. Match finish of exposed heads with material being fastened.

1. Use stainless steel screws with neoprene washers where indicated.

C. Asphalt Mastic: SSPC-Paint 12, solvent-type asphalt mastic, nominally free of sulfur and containing no asbestos fibers, compounded for 15-mildry film thickness per coat.

D. Mastic Sealant: Polyisobutylene; nonhardening, nonskinning, nondrying, nonmigrating sealant.

E. Elastomeric Sealant: Generic type recommended by sheet metal manufacturer and fabricator of components being sealed and complying with requirements for joint sealants as specified in Division 7 Section "Joint Sealants."

F. Epoxy Seam Sealer: 2-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior and interior nonmoving joints, including riveted joints.

G. Adhesives: Type recommended by flashing sheet metal manufacturer for waterproof and weather-resistant seaming and adhesive application of flashing sheet metal.

2.4 FABRICATION, GENERAL

A. Sheet Metal Fabrication Standard: Fabricate sheet metal flashing and trim to comply with recommendations of SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of the item indicated.

B. Comply with details shown to fabricate sheet metal flashing and trim that fit substrates and result in waterproof and weather-resistant performance once installed. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.

1. C. Form exposed sheet metal Work that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems.

D. Seams: Fabricate nonmoving seams in sheet metal with flat-lock seams. Tin edges to be

seamed, form seams, and solder.

For aluminum, form seams and seal with epoxy seam sealer. Rivet joints for additional strength.

E. Expansion Provisions: Space movement joints at maximum of 10 feetwith no joints allowed within 24 inchesof corner or intersection. Where lapped or bayonet-type expansion provisions in Work cannot be used or would not be sufficiently weatherproof and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inchdeep, filled with mastic sealant (concealed within joints).

F. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.

G. Separate metal from noncompatible metal or corrosive substrates by coating concealed surfaces at locations of contact with asphalt mastic or other permanent separation as recommended by manufacturer.

H. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of sheet metal exposed to public view.

I. Fabricate cleats and attachment devices from same material as sheet metal component being anchored or from compatible, noncorrosive metal recommended by sheet metal manufacturer.

1. Size: As recommended by SMACNA manual or sheet metal manufacturer for application but never less than thickness of metal being secured.

J. Hem exposed edges on underside ½ inch and miter and seam corners.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions under which sheet metal flashing and trim are to be installed and verify that Work may properly commence. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Unless otherwise indicated, install sheet metal flashing and trim to comply with performance requirements, manufacturer's installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Anchor units of Work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install Work with laps, joints, and seams that will be permanently watertight and weatherproof.

1. Install items true to line and level, secure in place, with square corners and true surfaces.

B. Separations: Separate metal from non compatible metal or corrosive substrates by coating concealed surfaces, at locations of contact, with asphalt mastic or other permanent

separation as recommended by manufacturer.

1. Bed flanges of Work in a thick coat of roofing cement where required for waterproof performance.

2. Underlayment: Where installing stainless steel or aluminum directly on cementitious or wood substrates, install a slip sheet of red-rosin paper and a course of polyethylene underlayment.

C. Install exposed sheet metal Work that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weather-resistant performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.

D. Expansion Provisions: Provide for thermal expansion of exposed sheet metal Work. Space movement joints at maximum of 10 feet (3 m) with no joints allowed within 24 inches (610 mm) of corner or intersection. Where lapped or bayonet-type expansion provisions in Work cannot be used or would not be sufficiently weatherproof and waterproof, form expansion joints of intermeshed hooked flanges, not less than 1 inch (25 mm) deep, filled with mastic sealant (concealed within joints).

E. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pretin edges of sheets to be soldered to a width of 1-1/2 inches (38 mm), except where pretinned surface would show in finished Work.

1. Do not solder the following metals:

a. Aluminum.

b. Coil-coated galvanized steel sheet.

2. Do not use torches for soldering. Heat surfaces to receive solder and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.

F. Seams: Fabricate nonmoving seams in sheet metal with flat-locks seams. Tin edges to be seamed, form seams, and solder.

G. Seams: Fabricate nonmoving seams in aluminum with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.

H. Counterflashings: Coordinate installation of counterflashings with installation of assemblies to be protected by counterflashing. Install counterflashings in reglets or receivers. Secure in a waterproof manner by means of snap-in installation and sealant, lead wedges and sealant, interlocking folded seam, or blind rivets and sealant. Lap counterflashing joints a minimum of 2 inchesand bed with sealant.

3.3 CLEANING AND PROTECTION

A. Clean exposed metal surfaces, removing substances that might cause corrosion of metal or deterioration of finishes.

B. Provide final protection and maintain conditions that ensure sheet metal flashing and trim Work during construction is without damage or deterioration other than natural weathering at the time of Substantial Completion.

SECTION CONTINUES ON NEXT PAGE

PART 4 - SUBMITTALS

4.1 SUBMITTALS SCHEDULE

A. Include this form with submittals of this Specification Section, unless a substitute product is being proposed, in which case refer to Division 1 **Section 01 2500** "Substitution Procedures" and **Section 01 6000** "Product Requirements" for substitution requests.

Contractor's Initials _____ Contractor is to acknowledge with initials each submittal included. Attach a letter of explanation for each submittal not included. All submitted products are as specified.

B. SUBMITTAL SCHEDULE:

_____1. Submit product data on reglets and factory-made items.
_____2. Submit two samples (5" x 7") of each material and finish.

_____3. Provide mockups as specified in Part 1 of this Section.

_____4. Submit shop drawings for fabricated items.

END OF SECTION 07 6200

SECTION 07 9200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 PERFORMANCE REQUIREMENTS

A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.

B. All construction joints, structural or mechanical or electrical penetrations, recessed boxes or fixtures, etc. shall be installed airtight to prevent sound transmission through building construction or from one room to another. The responsibility for airtight construction shall fall on the general contractor and all subcontractors who must coordinate their work in the field.

C. Refer to “Submittal Requirements for Schedule” Article at the end of this Section for required submittals.

1.2 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has specialized in installing joint sealants similar in material, design, and extent to those indicated for this Project and whose Work has resulted in joint-sealant installations with a record of successful in-service performance.

B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.

C. Mockups: Apply each sealant to anticipated materials at each joint to be sealed, in 6-inch long sections.

1. Submit to Architect for approval before beginning sealant Work at Project.
2. Demonstrate qualities of materials, execution, and appearance.

1.3 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration date, pot life, curing time, and mixing instructions for multicomponent materials.

B. Store and handle materials in compliance with manufacturer's written instructions to prevent their deterioration or damage to moisture, high or low temperatures, contaminants, or other causes.

1.4 PROJECT CONDITIONS

A. Environmental Limitations: Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 40 deg F (4.4 deg C).
2. When joint substrates are wet.

B. Joint-Width Conditions: Do not proceed with installation of joint sealants where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.

C. Joint-Substrate Conditions: Do not proceed with installation of joint sealants until contaminants capable of interfering with adhesion are removed from joint substrates.

1.5 WARRANTY

A. General Warranty: Special warranties specified in this Article shall not deprive District of other rights District may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Special Installer's Warranty: Written warranty, signed by Installer agreeing to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Submit two copies of warranty in same format as indicated in Division 1 Section 01 6000 "Product Requirements".
2. Warranty Period: Three years from date of Completion.

C. Special warranties specified in this Article exclude deterioration or failure of elastomeric joint sealants from the following:

1. Movement of the structure resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression caused by structural settlement or errors attributable to design or construction.
2. Disintegration of joint substrates from natural causes exceeding design specifications.
3. Mechanical damage caused by individuals, tools, or other outside agents.
4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - MATERIALS

2.1 PRODUCTS AND MANUFACTURERS

A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the products specified in the sealant schedules at the end of Part 3.

2.2 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.

1. Colors of Exposed Joint Sealants: Match adjacent material, except if two materials are present, obtain color selection from Architect from manufacturer's full range of colors.

2.3 ELASTOMERIC JOINT SEALANTS

A. Elastomeric Sealant Standard: Comply with ASTM C920 and other requirements indicated for each liquid-applied chemical curing sealant in the Elastomeric Joint-Sealant Schedule at the end of Part 3, including those referencing ASTM C920 classifications for type, grade, class, and uses.

2.4 LATEX JOINT SEALANTS

A. Latex Sealant Standard: Comply with ASTM C 834 for each product of this description indicated in the Latex Joint-Sealant Schedule at the end of Part 3.

2.5 JOINT-SEALANT BACKING

A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings: ASTM C 1330, of type indicated below and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance:

1. Type C: Closed-cell material with a surface skin.
2. Type O: Open-cell material.
3. Type B: Bicellular material with a surface skin.
4. Type: Any material indicated above, provided it is compatible with sealant and materials adjacent.

C. Elastomeric Tubing Sealant Backing: Neoprene, Butyl, EPDM, or silicone tubing complying with ASTM D 1056, nonabsorbent to water and gas, and capable of remaining resilient at temperatures down to minus 26 deg F (minus 32 deg C). Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth, and otherwise contribute to optimum sealant performance.

D. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

2.6 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants with joint substrates.

C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 AIRTIGHT EXECUTION

A. Partition Bases: Provide ¼" (high) continuous bead of acoustical sealant at all locations where gypsum board meets structural flooring. The depth of the sealant shall equal the thickness of the gypsum layer or layers.

B. Partition Heads: Provide the same detail as for bases at flat structure or decking with flutes parallell to the partition. Where heads meet decking with flutes perpendicular to the partition, cut gypsum board escutcheons to fit flutes and install over outer layers of gypsum board on both sides of partition, then caulk as described above.

C. Partition or Ceiling Joints at Dissimilar Materials: Provide ¼" continuous bead of acoustical sealant at all locations where gypsum board meets dissimilar material. The depth of the sealant shall equal the thickness of the gypsum layer or layers.

D. Partition Ends at Window Mullions: Attach single or multiple layers of gypsum board (matching the partition) continuously over the exposed sides of the window mullion. Caulk resulting joints at the wall end at the window glass.

E. Partition/Partition or Partition/Ceiling Joints: Provide standard corner taping detail.

F. Pipe, Duct, Conduit, or Structural Penetrations: Provide ¼" wide bead of acoustical sealant around perimeter of each penetrating element. The depth of the sealant shall equal the thickness of the gypsum layer or layers.

G. Electrical Boxes 4" x 4" or Under: Provide ¼" wide bead of acoustical sealant around perimeters of electrical boxes. The depth of the sealant shall equal the thickness of the gypsum layer or layers. Provide sheet caulking (e.g. Lowry Pads) continuous around the back side of boxes.

H. Electrical, Lighting, or Other Recessed Boxes Over 4" x 4":Provide one layer of 5/8" gypsum board continuous around the back of such boxes. Caulk or tape all joints and caulk all conduit penetrations with acoustical sealant.

3.2 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
2. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air. Porous joint surfaces include the following:

    a. Concrete.
    b. Masonry.
    c. Unglazed surfaces of ceramic tile.

3. Remove laitance and form-release agents from concrete.
4. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.

    a. Metal.
    b. Glass.
    c. Glazed surfaces of ceramic tile.

B. Joint Priming: Prime joint substrates where recommended in writing by joint sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.4 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations of ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Install sealant backings of type indicated to support sealants during application and at positions required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.
2. Do not stretch, twist, puncture, or tear sealant backings.
3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and back of joints. Do not allow 3-sided bond of sealants.

E. Install sealants by proven techniques to comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses provided for each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealants from surfaces adjacent to joint.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.

3.5 CLEANING

A. Clean off excess sealants or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.6 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installation with repaired areas are indistinguishable from the original Work.

3.7 ELASTOMERIC JOINT-SEALANT SCHEDULE

A. Low-Modulus Nonacid-Curing Silicone Sealant: Where joint sealants of this type are indicated, provide products complying with the following:

1. Products: Provide one of the following, or approved equal:

a. 795; Dow Corning, or approved equal by GE, or Tremco.
b. Type and Grade: S (single component) and NS (nonsag).
c. Hardness: 36.
d. Class: 25.
e. Use Related to Exposure: NT (nontraffic).
f. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.
g. Stain-Test-Response Characteristics: Nonstaining to porous substrates per ASTM C 1248.
h. Applications: Use for exterior vertical surfaces where sealant is not to be painted.

B. Mildew-Resistant Silicone Sealant: Where joint sealants of this type are indicated, provide products formulated with fungicide that are intended for sealing interior ceramic tile joints and other nonporous substrates that are subject to in-service exposures or high humidity and temperature extremes, and that comply with the following:

1. Products: Provide one of the following, or approved equal:

a. 786 Mildew Resistant; Dow Corning.
b. Sanitary 1700; GE Silicones.
c. 898 Silicone Sanitary Sealant; Pecora Corporation.
d. Tremsil 600 White; Tremco.

2. Type and Grade: S (single component) and NS (nonsag).
3. Class: 25.
4. Use Related to Exposure: NT (nontraffic).
5. Uses Related to Joint Substrates: G, A, and, as applicable to joint substrates indicated O.
6. Applications: Use at plumbing fixtures.

C. Multicomponent Nonsag Urethane Sealant: Where joint sealants of this type are indicated, provide products complying with the following:

1. Products: Provide one of the following or equal:

a. Chem-Calk 2000; Bostik Inc.
b. Vulkem 227; Mameco International.
c. Vulkem 922; Mameco International.
d. Elasto-Thane 920 Gun Grade; Pacific Polymers, Inc.
e. Dynatred; Pecora Corporation.
f. PSI-270SL; Polymeric Systems, Inc.
g. NP 2; Sonneborn Building Products Div., ChemRex Inc.

2. Type and Grade: M (multicomponent) and NS (nonsag).
3. Class: 25.
4. Uses Related to Exposure: T (traffic).
5. Uses Related to Joint Substrates: M, A, and, as applicable to joint substrates indicated, O.
6. Applications: Use for exterior and interior joints subject to vehicle or pedestrian traffic.

3.8 LATEX JOINT-SEALANT SCHEDULE

A. Latex Sealant: Where joint sealants of this type are indicated, provide products complying with the following:

1. Products: Provide one of the following, or approved equal:

    a. Chem-Calk 600; Bostik, Inc.
    b. LC 160 All Purpose Acrylic Caulk; Ohio Sealants, Inc.
    c. AC-20; Pecora Corporation.

2. Applications: Use for interior sealants in vertical surfaces that are to be painted.

SECTION CONTINUES ON NEXT PAGE

PART 4 - SUBMITTALS

4.1 SUBMITTALS SCHEDULE

A. Include this form with submittals of this Specification Section, unless a substitute is being proposed, in which case refer to Division 1 **Section 01 2500** "Substitution Procedures" and **Section 01 6000** "Product Requirements" for substitution requests.

Contractor's Initials _____	Contractor is to acknowledge with initials each submittal included. Attach a letter of explanation for each submittal not included. All submitted products are as specified.

B. SUBMITTAL SCHEDULE:

_____ 1. Product Data: For each joint-sealant product indicated.
_____ 2. Samples for Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.
_____ 3. Product Certificates: Signed by manufacturers of joint sealants certifying the products furnished comply with requirements and are suitable for the use indicated.
_____ 4. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
_____ 5. Warranties: Special warranties specified in this Section.
_____ 6. Mockups of each sealant joint as specified in Part 1 of this Section.

END OF SECTION 07 9200

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SECTION 08 7100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Mechanical door hardware for the following:

a. Pedestrian gates.

B. Related Requirements:

1. Section 32 3113 "Chain Link Fences and Gates"

1.2 COORDINATION

A. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

B. Security: Coordinate installation of door hardware, keying, and access control with Owner's door hardware technician.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Door Hardware Schedule: Prepared by or under the supervision of Installer's Architectural Hardware Consultant. Coordinate door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Submittal Sequence: Submit door hardware schedule concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate the fabrication of other work that is critical in Project construction schedule.
2. Format: Use same scheduling sequence and format as in door hardware schedule in the Contract Documents.
3. Content: Include the following information:

a. Identification number, location, hand, fire rating, size, and material of each door and frame.
b. Locations of each door hardware set, cross-referenced to Drawings on floor plans and to door and frame schedule.
c. Complete designations, including name and manufacturer, type, style, function, size, quantity, function, and finish of each door hardware product.
d. Fastenings and other installation information.
e. Explanation of abbreviations, symbols, and designations contained in door hardware schedule.
f. Mounting locations for door hardware.
g. List of related door devices specified in other Sections for each door and frame.

C. Keying Schedule: Prepared by or under the supervision of Installer's Architectural Hardware Consultant, detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations that are coordinated with the Contract Documents.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For each type of door hardware to include in maintenance manuals.

B. Schedules: Final door hardware schedule.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Supplier of products and an employer of workers trained and approved by product manufacturers and of an Architectural Hardware Consultant who is available during the course of the Work to consult Contractor, Architect, and Owner about door hardware and keying.

1. Warehousing Facilities: In Project's vicinity.
2. Scheduling Responsibility: Preparation of door hardware and keying schedule.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.

B. Tag each item or package separately with identification coordinated with the final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.

C. Deliver keys and permanent cores to Owner by registered mail or overnight package service.

1.8 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures including excessive deflection, cracking, or breakage.
b. Faulty operation of doors and door hardware.
c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.

2. Warranty Period: Three years from date of Substantial Completion unless otherwise indicated below:

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: Obtain each type of door hardware from single manufacturer.

2.2 MECHANICAL LOCKS AND LATCHES

A. Lock Functions: As indicated in door hardware schedule.

B. Lock Trim:

1. Description: As indicated on Drawings.

C. Strikes: Provide manufacturer's standard strike for each lock bolt or latchbolt complying with requirements indicated for applicable lock or latch and with strike box and curved lip extended to protect frame; finished to match lock or latch.

1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.

D. Bored Locks: BHMA A156.2; Grade 2; Series 4000.

2.3 LOCK CYLINDERS

A. Lock Cylinders: Tumbler type, constructed from brass or bronze, stainless steel, or nickel silver.

B. High-Security Lock Cylinders: BHMA A156.30; permanent cores that are removable; face finished to match lockset.

1. Type: M, mechanical.
2. Confirm District keyway prior to ordering permanent cores

C. Construction Cores: not required.

2.4 EXIT DEVICES AND AUXILIARY ITEMS

A. Exit Devices and Auxiliary Items: ANSI/BHMA A156.3.

2.5 KEYING

A. Keying System: Factory registered, complying with guidelines in BHMA A156.28, appendix. Provide one extra key blank for each lock.

1. Existing System:

a. Master key or grand master key locks to Owner's existing system.

2. Keyed Alike: Key all cylinders to same change key.

B. Keys: Brass.

1. Stamping: Permanently inscribe each key with a visual key control number and include the following notation:

a. Notation: Information to be furnished by Owner.

2.6 FABRICATION

A. Base Metals: Produce door hardware units of base metal indicated, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18.

B. Fasteners: Provide door hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware unless otherwise indicated.

1. Gasketing Fasteners: Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

2.7 FINISHES

A. Provide finishes complying with BHMA A156.18 as indicated in door hardware schedule.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Wood Doors: Comply with door and hardware manufacturers' written instructions.

3.3 INSTALLATION

A. Mounting Heights: Mount door hardware units at heights indicated on Drawings unless otherwise indicated or required to comply with governing regulations.
   1. Wood Doors: DHI's "Recommended Locations for Architectural Hardware for Wood Flush Doors."

B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work. Do not install surface-mounted items until finishes have been completed on substrates involved.

   1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
   2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

C. Hinges: Install types and in quantities indicated in door hardware schedule, but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.

D. Lock Cylinders: Install construction cores to secure building and areas during construction period.

1. Furnish permanent cores to Owner for installation.

E. Perimeter Gasketing: Apply to head, jamb, and sill, forming seal between door and frame.

1. Do not notch perimeter gasketing to install other surface-applied hardware.

F. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.

3.4 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.5 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items as necessary to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

3.6 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

3.7 DOOR HARDWARE SCHEDULE

A. Hardware Set 01 (with exit device, noted as “PH” on plans) to have the following:
- (2) ShutIt “BadAss VersaWeld” Hinges (note: not self-closing)
- (1) Von Duprin AX-CDSI-98-996L-626-4’
- (2) Cylinders, per District Standard (one for dogging)
- (1) 12” high Adjustable Panic Bar Plate (DAC Industries #D-6900-P or equal)
- (1) Lock Box (DAC Industries #D-6025-P or equal)
- (1) Strike Latch Receiver (DAC Industries #D-6020-P or equal)

B. Hardware Set 02 (no exit device) to have the following:
- (2) ShutIt “BadAss VersaWeld” Hinges (note: not self-closing)
- (1) Schlage ND10-LON-626 (note: passage latch, non-locking)
- (1) Lock Box (DAC Industries #D-6025-P or equal)
- (1) Strike Latch Receiver (DAC Industries #D-6020-P or equal)

END OF SECTION 08 7100

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SECTION 09 9114 - EXTERIOR PAINTING (MPI STANDARDS)

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Surface preparation and application of paint systems on exterior substrates.

B. Related Requirements:

1. Section 05 1200 "Structural Steel Framing" for shop priming of metal substrates.

1.2 DEFINITIONS

A. MPI Gloss Level 1: Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D523.

B. MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D523.

C. MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D523.

D. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D523.

E. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D523.

F. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D523.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include preparation requirements and application instructions.
2. Include printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
3. Indicate VOC content.

B. Samples: For each type of topcoat product.

C. Samples for Initial Selection: For each type of topcoat product.

D. Samples for Verification: For each type of paint system and each color and gloss of topcoat.

1. Submit Samples on rigid backing, 8 inches square.
2. Apply coats on Samples in steps to show each coat required for system.
3. Label each coat of each Sample.
4. Label each Sample for location and application area.

E. Product List: Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in the Exterior Painting Schedule to cross-reference paint systems specified in this Section. Include color designations.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

1.5 FIELD CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.

B. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Benjamin Moore & Co.
2. Dunn-Edwards Corporation (a Nippon Paint Holdings Co. Ltd. company).
3. Valspar; a brand of The Sherwin-Williams Company.
4. Zinsser; Rust-Oleum Corporation.
5. Sherwin-Williams Company (The).

B. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to products listed in the Exterior Painting Schedule for the paint category indicated.

C. Source Limitations: Obtain paint from single source from single manufacturer.

2.2 PAINT PRODUCTS

A. MPI Standards: Provide products complying with MPI standards indicated and listed in its "MPI Approved Products List."

B. Material Compatibility:

1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, provide products recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.

C. Colors: As selected by Architect from manufacturer's full range.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

1. Concrete: 12 percent.
2. Masonry (Clay and CMUs): 12 percent.
3. Wood: 15 percent.

C. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.

D. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates and paint systems indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.

C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

D. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.

E. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceeds that permitted in manufacturer's written instructions.

F. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

G. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

H. Wood Substrates:

1. Scrape and clean knots. Before applying primer, apply coat of knot sealer recommended in writing by topcoat manufacturer for exterior use in paint system indicated.
2. Sand surfaces that will be exposed to view, and remove sanding dust.
3. Prime edges, ends, faces, undersides, and backsides of wood.
4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

I. Plastic Trim Fabrication Substrates: Remove dust, dirt, and other foreign material that might impair bond of paints to substrates.

3.3 INSTALLATION

A. Apply paints in accordance with manufacturer's written instructions and recommendations in "MPI Manual."

1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.
3. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.

4. Primers specified in the Exterior Painting Schedule may be omitted on items that are factory primed or factory finished if compatible with intermediate and topcoat coatings and acceptable to intermediate and topcoat paint manufacturers.

B. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

C. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

D. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:

1. Paint the following work where exposed to view:

a. Equipment, including panelboards.
b. Uninsulated metal piping.
c. Uninsulated plastic piping.
d. Pipe hangers and supports.
e. Metal conduit.
f. Plastic conduit.

3.4 FIELD QUALITY CONTROL

A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.

1. Contractor shall touch up and restore painted surfaces damaged by testing.
2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written instructions, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written instructions.

3.5 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

1. Do not clean equipment with free-draining water and prevent solvents, thinners, cleaners, and other contaminants from entering into waterways, sanitary and storm drain systems, and ground.
2. Dispose of contaminants in accordance with requirements of authorities having jurisdiction.
3. Allow empty paint cans to dry before disposal.
4. Collect waste paint by type and deliver to recycling or collection facility.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 EXTERIOR PAINTING SCHEDULE

A. Concrete Substrates, Nontraffic Surfaces:

1. Latex System MPI EXT 3.1A:

a. Prime Coat: Primer, alkali resistant, water based, MPI #3.

b. Prime Coat, Latex: Exterior, matching topcoat.
c. Intermediate Coat: Latex, exterior, matching topcoat.

d. Low-Sheen Topcoat: Latex, exterior, low sheen (MPI Gloss Level 3-4), MPI #15.

B. Concrete Substrates, Traffic Surfaces:

1. Latex Deck Coating System MPI EXT 3.2B:

a. Prime Coat: As recommended in writing by topcoat manufacturer.
b. Intermediate Coat: As recommended in writing by topcoat manufacturer.
c. Topcoat: Deck coating, latex, MPI #127.

C. CMU Substrates:

1. Latex System MPI EXT 4.2A:

a. Prime Coat: Block filler, latex, interior/exterior, MPI #4.

b. Intermediate Coat: Latex, exterior, matching topcoat.

c. Low-Sheen Topcoat: Latex, exterior, low sheen (MPI Gloss Level 3-4), MPI #15.

D. Steel and Iron Substrates:

1. Water-Based Light Industrial Coating over Epoxy System MPI EXT 5.1R:

a. Prime Coat: Primer, epoxy, anti-corrosive MPI #101.

b. Intermediate Coat: Epoxy, high build, low gloss MPI #108.

c. Low-Sheen Topcoat: Light industrial coating, exterior, water based (MPI Gloss Level 3), MPI #161.

E. Galvanized-Metal Substrates:

1. Latex System MPI EXT 5.3A:

a. Cementitious Prime Coat: Primer, galvanized, cementitious, MPI #26.

b. Intermediate Coat: Latex, exterior, matching topcoat.

c. Low-Sheen Topcoat: Latex, exterior, low sheen (MPI Gloss Level 3-4), MPI #15.

F. Wood Substrates: Exposed framing.

1. Latex over Latex Primer System MPI EXT 6.2M:

a. Prime Coat: Primer, latex for exterior wood, MPI #6.

b. Intermediate Coat: Latex, exterior, matching topcoat.

c. Low-Sheen Topcoat: Latex, exterior, low sheen (MPI Gloss Level 3-4), MPI #15.

G. Wood Substrates: Wood trim.

1. Latex over Latex Primer System MPI EXT 6.3L:

a. Prime Coat: Primer, latex for exterior wood, MPI #6.

b. Intermediate Coat: Latex, exterior, matching topcoat.

c. Low-Sheen Topcoat: Latex, exterior, low sheen (MPI Gloss Level 3-4), MPI #15.

END OF SECTION 09 9114

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SECTION 11 6600 – ATHLETIC EQUIPMENT

PART 1 GENERAL

1.01 WORK INCLUDED

A. Provide all equipment and materials, and do all work necessary to furnish and install the athletic equipment, as indicated on the drawings and as specified herein. Athletic equipment shall include, but not be limited to:

1. SUWHCCRWM - Natural Wood Helmet Cubby and Coat Rack Unit
2. SUABRPL15 - Surface Mounted Bat Rack

1.02 RELATED WORK

A. Examine contract documents for requirements that affect work of this section. Other specification sections that directly relate to the work of this section include, but are not limited to:

1. Section 03 3000 - Cast-in-Place Concrete
2. Section 04 2200 - Concrete Unit Masonry

1.03 REFERENCES

A. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.

1. National Collegiate Athletic Association (NCAA)
2. International Amateur Athletic Association (IAAF)
3. American Sports Builders Association (ASBA)
4. American Wood Preserver's Association (AWPA)
5. Manufacturers Data and Recommended Installation Requirements

1.04 SUBMITTALS

A. Manufacturers Product Data

1. Provide manufacturers product data prior to actual field installation work, for Architects or Owners representatives review.

B. Shop Drawings

1. Provide drawings of the manufacturers recommended installation and foundation requirements prior to actual field installation work, for Architects or Owners representatives review.

1.05 QUALITY ASSURANCE

A. Manufacturers warranties shall pass to the Owner and certification made that the product materials meet all applicable grade trademarks or conform to industry standards and inspection requirements.

1.06 PRODUCT DELIVERY AND STORAGE

A. Materials delivered to the site shall be examined for damage or defects in shipping. Any defects shall be noted and reported to the Owners representative. Replacements, if necessary, shall be immediately re-ordered, so as to minimize any conflict with the construction schedule. Sound materials shall be stored above ground under protective cover or indoors so as to provide proper protection.

PART 2 PRODUCTS

2.01 Bat and Helmet Storage Unit

A. BASE: SUWHCCRWM - Natural Wood Helmet Cubby and Coat Rack Unit as Manufactured and Supplied by

Sportsfield Specialties Inc.
P.O. Box 231
41155 State Highway 10
Delhi, NY 13753
p. 888-975-3343
www.sportsfieldspecialties.com

B. COMPONENTS:

1. Pre-Assembled Natural Wood Helmet Cubby and Coat Rack Unit:
   a. Constructed of ¾" Exterior Grade A Plywood with Hardwood Ash Trim and Stainless Steel Screws, Minimum of Three (3) Coats of Marine Grade Clear Coat Polyurethane Finish
   b. Overall Dimensions: 16"D x 24"H x 96"L
   c. Includes Six (6) 16.5"H x 15.125"W x 18"D Helmet Cubbies
   d. Stained Hardwood Dowel/Coat Hooks Located 12" On-Center
   e. ¾" Solid Ash Support Bracket Every 32" On-Center
   f. Combine Multiple Units to Desired Overall Length
   g. Wall Mounting Hardware Not Included (Varies by Application)

2.02 SUABRPL15 - Surface Mounted Bat Rack (x15)

A. BASE: SUABRPL15 - Surface Mounted Bat Rack as Manufactured and Supplied by:

Sportsfield Specialties, Inc.

P.O. Box 231
41155 State Highway 10
Delhi, NY 13753
p. 888-975-3343
www.sportsfieldspecialties.com

B. COMPONENTS:

1. Pre-Assembled All-Weather Aluminum Surface Mounted Bat Rack (x15)
    a. Overall Dimensions: 20-1/8”H x 34-5/16”W x 11-3/8”D
    b. Constructed with 4” Diameter Aluminum Tubes
    c. Durable Powder Coated Finish
        i. Weather Resistant and Unsusceptible to Rust
        ii. Choose From Various Standard Color Options
    d. Bat Storage Tubes: Fifteen (15) 4” dia. x 12”
    e. Includes Base Plates with ½” Galvanized Steel Wedge Anchors for Surface Mounting to Concrete Slab
    f. 5-Year Manufacturer’s Limited Product Warranty

PART 3 EXECUTION

3.01 INSTALLATION OF EQUIPMENT

A. All athletic equipment shall be installed as recommended per manufacturer's written directions, and as indicated on the drawings.

END OF SECTION

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SECTION 26 0543 - UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Type EPEC raceways and fittings.
2. Type ERMC-SS raceways, elbows, couplings, and nipples.
3. Type ERMC-S raceways, elbows, couplings, and nipples.
4. Type IMC raceways.
5. Type PVC raceways and fittings.
6. Type RTRC-BG raceways and fittings.
7. Fittings for conduit, tubing, and cable.
8. Electrically conductive corrosion-resistant compounds for threaded conduit.
9. Solvent cements.
10. Duct accessories.
11. Handholes and boxes for exterior underground wiring.
12. Manholes for exterior underground wiring.
13. Utility structure accessories.
14. Duct sealing.

B. Related Requirements:

1. Section 26 0010 "Supplemental Requirements for Electrical" specifies additional abbreviations, definitions, submittals, qualifications, testing agencies, and other Project requirements applicable to Work specified in this Section.
2. Section 26 0553 "Identification for Electrical Systems" specifies underground-line warning tape and concrete cable routing markers (warning planks).

1.2 DEFINITIONS

A. Duct: A single raceway or multiple raceways, installed singly or as components of a duct bank.

B. Duct Bank: Two or more ducts installed in parallel, direct buried or with additional casing materials such as concrete.

C. Handhole: An underground chamber containing electrical cables, sized such that personnel are not required to enter in order to access the cables.

D. Manhole: An underground chamber containing electrical cables and equipment, sized to provide access with working space clearances.

E. Trafficways: Locations where vehicular or pedestrian traffic is a normal course of events.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. For concrete and steel used in precast concrete pullboxes and handholes, also include product certificates as required by ASTM C858.

1.4 INFORMATIONAL SUBMITTALS

A. Manufacturer's Published Instructions: Prepare and submit installation, testing, and operating instructions for product.

B. Field Reports:

1. Factory Test Reports: For handholes and boxes.
2. Manufacturer's field reports for field quality-control support.

PART 2 - PRODUCTS

2.1 TYPE EPEC RACEWAYS AND FITTINGS

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
2. General Characteristics: UL 651A and UL CCN EAZX.

B. Schedule 40 Electrical HDPE Underground Conduit (EPEC-40):

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Blue Diamond Industries, LLC.
b. JM Eagle.
c. Petroflex North America.
d. Prysmian Cables and Systems; Prysmian Group North America.
e. Southwire Company, LLC.

2. Dimensional Specifications: Schedule 40.
3. Options:

a. Minimum Trade Size: Metric designator 21 (trade size 3/4).

C. Schedule 80 Electrical HDPE Underground Conduit (EPEC-80):

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Blue Diamond Industries, LLC.
    b. JM Eagle.
    c. Petroflex North America.
    d. Prysmian Cables and Systems; Prysmian Group North America.
    e. Southwire Company, LLC.

2. Dimensional Specifications: Schedule 80.
3. Options:

    a. Minimum Trade Size: Metric designator 21 (trade size 3/4).

2.2 TYPE ERMC-S RACEWAYS, ELBOWS, COUPLINGS, AND NIPPLES

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
2. General Characteristics: UL 6 and UL CCN DYIX.

B. Galvanized-Steel Electrical Rigid Metal Conduit (ERMC-S-G), Elbows, Couplings, and Nipples:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Allied Tube & Conduit; Atkore International.
    b. Killark; brand of Hubbell Electrical Solutions; Hubbell Incorporated.
    c. Republic Conduit; Nucor Corporation, Nucor Tubular Products.
    d. Western Tube; Zekelman Industries.
    e. Wheatland Tube; Zekelman Industries.

2. Exterior Coating: Zinc.
3. Options:

    a. Interior Coating: Zinc with organic top coating.
    b. Minimum Trade Size: Metric designator 21 (trade size 3/4).

2.3 DUCT ACCESSORIES

A. Duct Spacers: Factory-fabricated, rigid, PVC interlocking spacers; sized for type and size of duct with which used, and selected to provide minimum duct spacing indicated while supporting duct during concreting or backfilling.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. ABB, Electrification Business.
    b. Allied Tube & Conduit; Atkore International.
    c. Cantex Inc.
    d. IPEX USA LLC.
    e. PenCell Plastics; brand of Hubbell Utility Solutions; Hubbell Incorporated.
    f. Underground Devices, Inc.

2.4 HANDHOLES AND BOXES FOR EXTERIOR UNDERGROUND WIRING

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.
2. General Characteristics:

    a. ASTM C858 for design and manufacturing processes.
    b. SCTE 77.

B. Precast Concrete Handholes and Boxes:

1. Description: Factory-fabricated, reinforced-concrete, monolithically poured walls and bottom unless open-bottom enclosures are indicated. Frame and cover must form top of enclosure and must have load rating consistent with that of handhole or box.

2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Oldcastle Infrastructure Inc.; CRH Americas.
    b. Riverton Concrete Products.
    c. Utility Concrete Products, LLC.
    d. Utility Vault Co.

3. Configuration: Units must be designed for flush burial and have open bottom unless otherwise indicated.
4. Frame and Cover:

    a. Weatherproof cast-iron frame, with cast-iron cover with recessed cover hook eyes and tamper-resistant, captive, cover-securing bolts.
    b. Cover Finish: Nonskid finish must have minimum coefficient of friction of 0.50.
    c. Cover Legend: Molded lettering, "ELECTRIC".

5. Extensions and Slabs: Designed to mate with bottom of enclosure. Same material as enclosure.

a. Extension must provide increased depth of 12 inch.
b. Slab: Same dimensions as bottom of enclosure, and arranged to provide closure.

6. Joint Sealant: Asphaltic-butyl material with adhesion, cohesion, flexibility, and durability properties necessary to withstand maximum hydrostatic pressures at installation location with ground-water level at grade.

7. Handholes 12 inch wide by 24 inch long and larger must have inserts for cable racks and pulling-in irons installed before concrete is poured.

2.5 DUCT SEALING

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. ABB, Electrification Business.
2. American Polywater Corporation.
3. Gardner Bender.
4. NSi Industries LLC.
5. TE Connectivity Ltd.

B. Duct-Sealing Compound: Nonhardening, safe for contact with human skin, not deleterious to cable insulation, and workable at temperatures as low as 35 deg F. Compound must be capable of withstanding temperature of 300 deg F without slump and adhering to clean surfaces of plastic ducts, metallic conduit, conduit and duct coatings, concrete, masonry, lead, cable sheaths, cable jackets, insulation materials, and common metals. Duct sealing compound must be removable without damaging ducts or cables.

C. Inflatable Duct-Sealing System: Wraparound inflatable bladder that seals ducts that are empty or containing conductors against air and water infiltration. System is suitable for use in steel, plastic, or concrete ducts and penetrations.

PART 3 - EXECUTION

3.1 PREPARATION

A. Coordinate layout and installation of duct, duct bank, manholes, handholes, and boxes with final arrangement of other utilities, site grading, and surface features as determined in field. Notify Architect if there is conflict between areas of excavation and existing structures or archaeological sites to remain.

B. Coordinate elevations of duct and duct-bank entrances into manholes, handholes, and boxes with final locations and profiles of duct and duct banks, as determined by coordination with other utilities, underground obstructions, and surface features. Revise locations and elevations as

required to suit field conditions and to ensure that duct and duct bank will drain to manholes and handholes, and as approved by Architect.

C. Clear and grub vegetation to be removed, and protect vegetation to remain in accordance with Section 31 1000 "Site Clearing." Remove and stockpile topsoil for reapplication in accordance with Section 31 1000 "Site Clearing."

3.2 SELECTION OF UNDERGROUND DUCTS

A. Duct for Electrical Feeders 600 V and Less: EPEC-40, unless otherwise indicated.

B. Duct for Electrical Branch Circuits: EPEC-80, direct buried unless otherwise indicated.

C. Underground Ducts Crossing Paved Paths Walks and Driveways: PVC-40 encased in reinforced concrete.

D. Stub-ups: Concrete encased, PVC-40.

3.3 SELECTION OF UNDERGROUND ENCLOSURES

A. Handholes and Boxes:

1. Units in Roadways and Other Deliberate Traffic Paths: Precast concrete, AASHTO HB 17, H-20 structural load rating.
2. Units in Driveway, Parking Lot, and Off-Roadway Locations, Subject to Occasional, Nondeliberate Loading by Heavy Vehicles: Precast concrete, AASHTO HB 17, H-20 structural load rating.
3. Units in Sidewalk and Similar Applications with Safety Factor for Nondeliberate Loading by Vehicles: Precast concrete, AASHTO HB 17, H-10 structural load rating.
4. Cover design load must not exceed load rating of handhole or box.

3.4 EARTHWORK

A. Excavation and Backfill: Comply with Section 31 2000 "Earth Moving," but do not use heavy-duty, hydraulic-operated, compaction equipment.

B. Restoration: Restore area immediately after backfilling is completed or after construction vehicle traffic in immediate area is complete.

C. Restore surface features at areas disturbed by excavation, and re-establish original grades unless otherwise indicated. Replace removed sod immediately after backfilling is completed.

D. Restore areas disturbed by trenching, storing of dirt, cable laying, and other work. Restore vegetation and include necessary topsoiling, fertilizing, liming, seeding, sodding, sprigging, and mulching. Comply with Section 32 9200 "Turf and Grasses" and Section 32 9300 "Plants."

E. Cut and patch existing pavement in path of underground duct, duct bank, and underground structures in accordance with "Cutting and Patching" Article in Section 01 7300 "Execution."

3.5 INSTALLATION OF DUCTS AND DUCT BANKS

A. Reference Standards:

1. Unless more stringent requirements are specified in Contract Documents or manufacturers' published instructions, comply with NEMA TCB 2 for installation of underground ducts and duct banks.
2. Consult Architect for resolution of conflicting requirements.

B. Special Techniques:

1. Where indicated on Drawings, install duct, spacers, and accessories into duct-bank configuration shown. Duct installation requirements in this Section also apply to duct bank.
2. Steel raceway, bends, and fittings in single duct run or duct bank must be of same type.
3. Slope: Pitch duct minimum slope of 1:300 down toward manholes and handholes and away from buildings and equipment. Slope duct from high point between two manholes to drain in both directions.
4. Install expansion fitting near center of straight line duct with calculated expansion of more than 3/4 inch.
5. Curves and Bends:

    a. Use 5-degree angle couplings for small changes in direction. Use manufactured long sweep bends with minimum radius of 48 inch, both horizontally and vertically, at other locations unless otherwise indicated.
    b. Duct must have maximum of 180 degrees of bends between pull points.

6. Joints: Use solvent-cemented joints in nonmetallic duct and fittings and make watertight in accordance with manufacturer's published instructions. Stagger couplings so those of adjacent duct do not lie in same plane. Couple steel conduits to ducts with adapters designed for this purpose, and encase coupling with minimum 3 inch of concrete for minimum of 12 inch on each side of coupling.

    a. Install insulated grounding bushings on steel raceway terminations that are less than 12 inch below grade or floor level and do not terminate in hubs.

7. End Bell Entrances to Manholes and Concrete and Polymer Concrete Handholes: Use end bells, spaced approximately 10 inch o.c. for 5 inch duct, and vary proportionately for other duct sizes.

    a. Begin change from regular spacing to end-bell spacing 10 ft from end bell, without reducing duct slope and without forming trap in line.
    b. Grout end bells into structure walls from both sides to provide watertight entrances.

8. Building Wall Penetrations: Make transition from underground duct to steel raceway at least 10 ft outside building wall, without reducing duct line slope away from building and

without forming trap in line. Use fittings manufactured for transition to steel raceway type installed. Install steel raceway penetrations of building.

9. Install manufactured steel raceway elbows for stub-ups at poles unless otherwise indicated. Encase elbows for stub-up ducts throughout length of elbow.

    a. Couple steel elbows to ducts with adapters designed for this purpose, and encase coupling with minimum 3 inch of concrete for minimum of 12 inch on each side of coupling.

10. Sealing: Provide temporary closure at terminations of duct with pulled cables. Seal spare duct at terminations. Use sealing compound and plugs to withstand at least 15 psig hydrostatic pressure.
11. Pulling Cord: Install 200 lbf test nylon cord in empty ducts.
12. Concrete-Encased Ducts and Duct Bank:

    a. Excavate trench bottom to provide firm and uniform support for duct. Prepare trench bottoms as specified in Section 31 2000 "Earth Moving" for pipes 6 inch or less in nominal diameter.
    b. Width: Excavate trench 12 inches wider than duct on each side.
    c. Depth: Install so top of duct envelope is at least 24 inches below finished grade in areas not subject to deliberate traffic, and at least 30 inches below finished grade in deliberate traffic paths for vehicles unless otherwise indicated. Install so top of duct envelope is below local frost line.
    d. Support duct on duct spacers coordinated with duct size, duct spacing, and outdoor temperature.
    e. Spacer Installation: Place spacers close enough to prevent sagging and deforming of duct, with not less than five spacers per 20 ft of duct. Place spacers within 24 inch of duct ends. Stagger spacers approximately 6 inch between tiers. Secure spacers to earth and to duct to prevent floating during concreting. Tie entire assembly together using fabric straps; do not use tie wires or reinforcing steel that may form conductive or magnetic loops around ducts or duct groups.
    f. Minimum Space between Ducts: 3 inch between edge of duct and exterior envelope wall, 2 inch between ducts for like services, and 4 inch between power and communications ducts.
    g. Elbows:
        1) Use manufactured steel elbows for stub-ups, at building entrances, and at changes of direction in duct run.

    h. Stub-ups to Outdoor Equipment: Extend concrete-encased steel raceway horizontally minimum of 60 inch from edge of equipment base.

        1) Stub-ups must be minimum 4 inch above finished floor and minimum 3 inch from conduit side to edge of slab.

    i. Reinforcement: Reinforce concrete-encased duct where crossing disturbed earth and where indicated. Arrange reinforcing rods and ties without forming conductive or magnetic loops around ducts or duct groups.

j. Forms: Use walls of trench to form side walls of duct bank where soil is self-supporting and concrete envelope can be poured without soil inclusions; otherwise, use forms.
k. Concrete Cover: Install minimum of 3 inch of concrete cover between edge of duct to exterior envelope wall, 2 inch between duct of like services, and 4 inch between power and communications ducts.
l. Place minimum 6 inch of engineered fill above concrete encasement of duct.
m. Concreting Sequence: Pour each run of envelope between manholes or other terminations in one continuous operation.

1) Start at one end and finish at other, allowing for expansion and contraction of duct as its temperature changes during and after pour. Use expansion fittings installed in accordance with manufacturer's published instructions, or use other specific measures to prevent expansion-contraction damage.
2) If more than one pour is necessary, terminate each pour in vertical plane and install 3/4 inch reinforcing-rod dowels extending minimum of 18 inch into concrete on both sides of joint near corners of envelope.

n. Pouring Concrete: Comply with requirements in "Concrete Placement" Article in Section 03 3000 "Cast-in-Place Concrete." Place concrete carefully during pours to prevent voids under and between duct and at exterior surface of envelope. Do not allow heavy mass of concrete to fall directly onto ducts. Allow concrete to flow around duct and rise up in middle, uniformly filling open spaces. Do not use power-driven agitating equipment unless specifically designed for duct-installation application.

13. Direct-Buried Duct and Duct Bank:

a. Excavate trench bottom to provide firm and uniform support for duct. Comply with requirements in Section 31 2000 "Earth Moving" for preparation of trench bottoms for pipes less than 6 inch in nominal diameter.
b. Width: Excavate trench 12 inch wider than duct on each side.
c. Depth: Install top of duct at least 36 inch below finished grade unless otherwise indicated.
d. Set elevation of top of duct bank below frost line.
e. Place minimum 3 inch of sand as bed for duct. Place sand to minimum of 6 inch above top level of duct.
f. Support ducts on duct spacers coordinated with duct size, duct spacing, and outdoor temperature.
g. Spacer Installation: Place spacers close enough to prevent sagging and deforming of duct, with not less than five spacers per 20 ft of duct. Place spacers within 24 inch of duct ends. Stagger spacers approximately 6 inch between tiers. Secure spacers to earth and to ducts to prevent floating during concreting. Tie entire assembly together using fabric straps; do not use tie wires or reinforcing steel that may form conductive or magnetic loops around ducts or duct groups.
h. Install duct with minimum of 3 inch between ducts for like services and 6 inch between power and communications duct.

i. Install manufactured steel elbows for stub-ups, at building entrances, and at changes of direction in duct.

1) Couple RNC duct to steel raceway with adapters designed for this purpose, and encase coupling with minimum 3 inch of concrete.
2) Stub-ups to Outdoor Equipment: Extend concrete-encased steel raceway horizontally minimum of 60 inch from edge of base. Install insulated grounding bushings on terminations at equipment.

a) Stub-ups must be minimum 4 inch above finished base and minimum 3 inch from conduit side to edge of base.

j. After installing first tier of duct, backfill and compact. Start at tie-in point and work toward end of duct run, leaving ducts at end of run free to move with expansion and contraction as temperature changes during this process. Repeat procedure after placing each tier. After placing last tier, hand place backfill to 4 inch over duct and hand tamp. Firmly tamp backfill around ducts to provide maximum supporting strength. Use hand tamper only. After placing controlled backfill over final tier, make final duct connections at end of run and complete backfilling with normal compaction. Comply with requirements in Section 31 2000 "Earth Moving" for installation of backfill materials.

14. Underground-Line Warning Tape: Bury conducting underground line specified in Section 26 0553 "Identification for Electrical Systems" no less than 12 inch above concrete-encased duct and duct banks and approximately 12 inch below grade. Align tape parallel to and within 3 inch of centerline of duct bank. Provide additional warning tape for each 12 inch increment of duct-bank width over nominal 18 inch. Space additional tapes 12 inch apart, horizontally across width of ducts.
15. Ground ducts and duct banks in accordance with Section 26 0526 "Grounding and Bonding for Electrical Systems."

3.6 INSTALLATION OF CONCRETE MANHOLES, HANDHOLES, AND BOXES

A. Reference Standards:

1. Precast Concrete Handholes: Comply with ASTM C891 unless otherwise indicated.
2. Consult Architect for resolution of conflicting requirements.

B. Special Techniques:

1. Precast Concrete Handholes and Manholes:

a. Install units level and plumb and with orientation and depth coordinated with connecting duct to minimize bends and deflections required for proper entrances.
b. Unless otherwise indicated, support units on level bed of crushed stone or gravel graded from 1 inch sieve to No. 4 sieve and compacted to same density as adjacent undisturbed earth.

c. Field-cut openings for conduits in accordance with enclosure manufacturer's published instructions. Cut wall of enclosure with tool designed for material to be cut. Size holes for terminating fittings to be used, and seal around penetrations after fittings are installed.

2. Elevations:

a. Handhole Covers: In paved areas and trafficways, set surface flush with finished grade. Set covers of other handholes 1 inch above finished grade.
b. Where indicated, cast handhole cover frame integrally with handhole structure.

3. Hardware: Install removable hardware, including pulling eyes, cable stanchions, and cable arms, as required for installation and support of cables and conductors and as indicated.
4. Field-Installed Bolting Anchors in Manholes and Concrete Handholes: Do not drill deeper than 3-7/8 inch for manholes and 2 inch for handholes, for anchor bolts installed in field. Use minimum of two anchors for each cable stanchion.
5. Ground manholes, handholes, and boxes in accordance with Section 26 0526 "Grounding and Bonding for Electrical Systems."

3.7 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. Demonstrate capability and compliance with requirements on completion of installation of underground duct, duct bank, and utility structures.
2. Pull solid aluminum or wood test mandrel through duct to prove joint integrity and adequate bend radii, and test for out-of-round duct. Provide minimum 12 inch long mandrel equal to duct size minus 1/4 inch. If obstructions are indicated, remove obstructions and retest.

B. Nonconforming Work:

1. Underground ducts, raceways, and structures will be considered defective if they do not pass tests and inspections.
2. Correct deficiencies and retest as specified above to demonstrate compliance.

C. Field Quality-Control Reports: Collect, assemble, and submit test and inspection reports.

3.8 CLEANING

A. Pull leather-washer-type duct cleaner, with graduated washer sizes, through full length of duct until duct cleaner indicates that duct is clear of dirt and debris. Follow with rubber duct swab for final cleaning and to assist in spreading lubricant throughout ducts.

B. Clean internal surfaces of manholes, including sump, and building interiors affected by Work.

1. Sweep floor, removing dirt and debris.

2. Remove foreign material.

END OF SECTION 26 0543

SECTION 26 0553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Labels.
2. Bands.
3. Tapes and stencils.
4. Tags.
5. Signs.
6. Cable ties.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 LABELS

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.
2. Listing Criteria: UL CCN PGDQ2 for components; including UL 969.

B. UL PGDQ2 - Vinyl Wraparound Labels: Preprinted, flexible labels laminated with clear, weather- and chemical-resistant coating and matching wraparound clear adhesive tape for securing label ends.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Grafoplast Wire Markers.
b. Panduit Corp.
c. Seton Identification Products; a Brady Corporation company.

C. UL PGDQ2 - Self-Adhesive Wraparound Labels: Preprinted, 3 mil thick, polyester flexible label with acrylic pressure-sensitive adhesive.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. A'n D Cable Products.
b. Brady Corporation.
c. Grafoplast Wire Markers.
d. Panduit Corp.
e. Seton Identification Products; a Brady Corporation company.

2. Self-Lamination: Clear; UV-, weather-, and chemical-resistant; self-laminating, with protective shield over legend. Size labels such that clear shield overlaps entire printed legend.
3. Marker for Labels:

a. Machine-printed, permanent, waterproof, black ink recommended by printer manufacturer.

D. UL PGDQ2 - Self-Adhesive Labels: Polyester, thermal, transfer-printed, 3 mil thick, multicolor, weather- and UV-resistant, pressure-sensitive adhesive labels, configured for intended use and location.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. A'n D Cable Products.
b. Brady Corporation.
c. Grafoplast Wire Markers.
d. Panduit Corp.
e. Seton Identification Products; a Brady Corporation company.

2. Minimum Nominal Size:

a. 1-1/2 by 6 inch for raceway and conductors.
b. 3-1/2 by 5 inch for equipment.
c. As required by authorities having jurisdiction.

2.2 BANDS

A. Snap-Around Labels: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeves, with diameters sized to suit diameters and that stay in place by gripping action.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Brady Corporation.
    b. Marking Services Inc.
    c. Panduit Corp.
    d. Seton Identification Products; a Brady Corporation company.

B. Snap-Around, Color-Coding Bands: Slit, pretensioned, flexible, solid-colored acrylic sleeves, 2 inch long, with diameters sized to suit diameters and that stay in place by gripping action.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Brady Corporation.
    b. Marking Services Inc.
    c. Panduit Corp.

2.3 TAPES AND STENCILS

A. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Brady Corporation.
    b. Marking Services Inc.
    c. Panduit Corp.

B. Underground-Line Warning Tape:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Brady Corporation.
    b. Ideal Industries, Inc.
    c. Marking Services Inc.
    d. Pipemarker.com; Brimar Industries, Inc.
    e. Reef Industries, Inc.
    f. Seton Identification Products; a Brady Corporation company.

2. Tape:

a. Recommended by manufacturer for method of installation and suitable to identify and locate underground electrical utility lines.
b. Printing on tape must be permanent and may not be damaged by burial operations.
c. Tape material and ink must be chemically inert and not be subject to degradation when exposed to acids, alkalis, and other destructive substances commonly found in soils.

3. Color and Printing:

a. Comply with APWA Uniform Color Code using NEMA Z535.1 safety colors.
b. Inscriptions for Red Tapes: "CAUTION BURIED ELECTRIC LINE BELOW".

4. Detectable Line-Warning Tape:

a. Detectable three-layer laminate, consisting of printed pigmented polyolefin film, solid aluminum-foil core, and clear protective film that allows inspection of continuity of conductive core; bright colored, continuous-printed on one side with inscription of utility, compounded for direct-burial service.
b. Width: 3 inch.
c. Overall Thickness: 5 mil.
d. Foil Core Thickness: 0.35 mil.
e. Weight: 28 lb/1000 sq. ft.
f. Tensile in accordance with ASTM D882: 70 lbf and 4600 psi.

2.4 TAGS

A. Metal Tags: Brass or aluminum, 2 by 2 by 0.05 inch, with stamped legend, punched for use with self-locking cable tie fastener.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Brady Corporation.
b. Marking Services Inc.
c. Seton Identification Products; a Brady Corporation company.

B. Write-on Tags:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Brady Corporation.
b. Pipemarker.com; Brimar Industries, Inc.
c. Seton Identification Products; a Brady Corporation company.

2. Polyester Tags: 0.010 inch thick, with corrosion-resistant grommet and cable tie for attachment.
3. Marker for Tags:

    a. Permanent, waterproof, black ink marker recommended by tag manufacturer.
    b. Machine-printed, permanent, waterproof, black ink marker recommended by printer manufacturer.

2.5 SIGNS

A. Baked-Enamel Signs:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Brady Corporation.
    b. Champion America.
    c. Marking Services Inc.

2. Preprinted aluminum signs punched or drilled for fasteners, with colors, legend, and size required for application.
3. 1/4 inch grommets in corners for mounting.
4. Nominal Size: 7 by 10 inch.

B. Metal-Backed Butyrate Signs:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

    a. Brady Corporation.
    b. Champion America.
    c. Marking Services Inc.

2. Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs, with 0.0396 inch galvanized-steel backing, punched and drilled for fasteners, and with colors, legend, and size required for application.
3. 1/4 inch grommets in corners for mounting.
4. Nominal Size: 10 by 14 inch.

C. Laminated Acrylic or Melamine Plastic Signs:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Brady Corporation.
b. Marking Services Inc.
c. Seton Identification Products; a Brady Corporation company.

2. Engraved legend.
3. Thickness:

a. For signs up to 20 sq. inch, minimum 1/16 inch thick.
b. For signs larger than 20 sq. inch, 1/8 inch thick.
c. Engraved legend with black letters on white face.
d. Self-adhesive.
e. Framed with mitered acrylic molding and arranged for attachment at applicable equipment.

2.6 CABLE TIES

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. HellermannTyton.
2. Ideal Industries, Inc.
3. Marking Services Inc.
4. Panduit Corp.

B. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.
2. Listing Criteria: UL CCN ZODZ; including UL 1565 or UL 62275.

C. UL ZODZ - General-Purpose Cable Ties: Fungus inert, self-extinguishing, one piece, self-locking, and Type 6/6 nylon.

1. Minimum Width: 3/16 inch.
2. Tensile Strength at 73 deg F in accordance with ASTM D638: 12,000 psi.
3. Temperature Range: Minus 40 to plus 185 deg F.
4. Color: Black, except where used for color-coding.

D. UL ZODZ - UV-Stabilized Cable Ties: Fungus inert, designed for continuous exposure to exterior sunlight, self-extinguishing, one piece, self-locking, and Type 6/6 nylon.

1. Minimum Width: 3/16 inch.
2. Tensile Strength at 73 deg F in accordance with ASTM D638: 12,000 psi.
3. Temperature Range: Minus 40 to plus 185 deg F.
4. Color: Black.

E. UL ZODZ - Plenum-Rated Cable Ties: Self-extinguishing, UV stabilized, one piece, and self-locking.

1. Minimum Width: 3/16 inch.
2. Tensile Strength at 73 deg F in accordance with ASTM D638: 7000 psi.
3. UL 94 Flame Rating: 94V-0.
4. Temperature Range: Minus 50 to plus 284 deg F.
5. Color: Black.

PART 3 - EXECUTION

3.1 PREPARATION

A. Self-Adhesive Identification Products: Before applying electrical identification products, clean substrates of substances that could impair bond, using materials and methods recommended by manufacturer of identification product.

3.2 SELECTION OF COLORS AND IDENTIFICATION MARKINGS

A. Comply with 29 CFR 1910.144 for color identification of hazards, and the following:

1. Fire-protection and fire-alarm equipment must be finished, painted, or suitably marked safety red. Conduits do not need to be painted red.
2. Ceiling-mounted hangers, supports, cable trays, and raceways must be finished, painted, or suitably marked safety yellow where less than 7.7 ft above finished floor.

B. Pipe and Conduit Labeling: Comply with ASME A13.1.

C. Color-Coding for Phase- and Voltage-Level Identification, 1000 V or Less: Use colors listed below for ungrounded service, feeder, and branch-circuit conductors.

1. Color must be factory applied or field applied for sizes larger than 6 AWG when permitted by authorities having jurisdiction.
2. Colors for 208Y/120 V Circuits:

a. Phase A: Black.
b. Phase B: Red.
c. Phase C: Blue.

3. Colors for 240 V Circuits:

a. Phase A: Black.
b. Phase B: Red.

4. Colors for 480Y/277 V Circuits:

a. Phase A: Brown.
b. Phase B: Orange.
c. Phase C: Yellow.

5. Color for Neutral (Grounded Conductor): White or gray.
6. Color for Equipment Ground: Green.
7. Color for Isolated Ground: Green with two or more yellow stripes.

D. Color-Coding Raceways, Cable Trays, Junction Boxes, and Conductors for Intrinsically-Safe Circuits: Light blue. When used to identify intrinsically-safe circuits, Article 504 of NFPA 70 requires that the color light blue not be used for any other purpose.

E. Color-Coding Instructional Signs: Self-adhesive labels, including color code for grounded and ungrounded conductors.

F. Accessible Fittings for Raceways: Identify cover of junction and pull box of the following systems with wiring system legend and system voltage. System legends must be as follows:

1. "EMERGENCY POWER."
2. "POWER."
3. "UPS."

G. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, pull points, and locations of high visibility. Identify by system and circuit designation.

H. Locations of Underground Lines: Underground-line warning tape for power and lighting.

I. Vaults, Manholes, Handholes, and Pull and Junction Boxes, 1000 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use vinyl wraparound labels, self-adhesive wraparound labels, or snap-around color-coding bands to identify phase.

1. Locate identification at changes in direction, at penetrations of walls and floors, at 50 ft maximum intervals in straight runs, and at 25 ft maximum intervals in congested areas.
2. Identify system voltage and system or service type with black letters on orange field.

J. Accessible Raceways and Metal-Clad Cables, 1000 V or Less, for Service, Feeder, and Branch Circuits, More Than 30 A and 120 V to Ground: Identify with self-adhesive vinyl tape applied in bands.

1. Locate identification at changes in direction, at penetrations of walls and floors, at 50 ft maximum intervals in straight runs, and at 25 ft maximum intervals in congested areas.
2. Identify system voltage and system or service type with black letters on orange field.

K. Conductors to Be Extended in Future: Attach write-on tags to conductors and list source.

L. Cover Plates: Label individual cover plates with self-adhesive labels. Place label at top of cover plate. Label cover plate with the following information, in the order listed:

1. Panelboard designation.
2. Colon or dash.
3. Branch circuit number.

M. Workspace Indication: Apply floor marking tape to finished surfaces. Show working clearances in direction of access to live parts. Workspace must comply with NFPA 70 and 29 CFR 1926.403 unless otherwise indicated. Do not install at flush-mounted panelboards and similar equipment in finished spaces.

N. Equipment Identification Labels:

1. Black letters on white field.
2. Outdoor Equipment: Engraved laminated acrylic or melamine sign.
3. Equipment to Be Labeled:

    a. Racks, Frames, and Enclosures: Identify front and rear of each with self-adhesive labels containing equipment designation.
    b. Panelboards: Typewritten directory of circuits in location provided by panelboard manufacturer. Panelboard identification must be in form of self-adhesive, engraved laminated acrylic or melamine label.
    c. Enclosures and electrical cabinets.
    d. Access doors and panels for concealed electrical items.
    e. Switchgear.
    f. Switchboards.
    g. Transformers: Label that includes tag designation indicated on Drawings for transformer, feeder, and panelboards or equipment supplied by secondary.
    h. Substations.
    i. Emergency system boxes and enclosures.
    j. Motor-control centers.
    k. Enclosed switches.
    l. Enclosed circuit breakers.
    m. Enclosed controllers.
    n. Variable-speed controllers.
    o. Push-button stations.
    p. Power-transfer equipment.
    q. Contactors.
    r. Remote-controlled switches, dimmer modules, and control devices.
    s. Uninterruptible power supplies.
    t. Battery-inverter units.
    u. Battery racks.
    v. Power-generating units.
    w. Monitoring and control equipment.

O. Cable Ties: General purpose, for attaching tags, except as listed below:

1. Outdoors: UV-stabilized nylon.
2. In Spaces Handling Environmental Air: Plenum rated.

3.3 SELECTION OF SIGNS AND HAZARD MARKINGS

A. Comply with 29 CFR 1910.145 for danger, caution, warning, and safety instruction signs.

B. Signs, labels, and tags required for personnel safety must comply with the following standards:

1. Safety Colors: NEMA Z535.1.
2. Facility Safety Signs: NEMA Z535.2.
3. Safety Symbols: NEMA Z535.3.
4. Product Safety Signs and Labels: NEMA Z535.4.
5. Safety Tags and Barricade Tapes for Temporary Hazards: NEMA Z535.5.

C. Electrical Hazard Warnings:

1. Arc-Flash Hazard Warning: Self-adhesive labels. Comply with NFPA 70E requirements for arc-flash hazard warning labels.
2. Multiple Power Sources Warning Legend: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."
3. OSHA Workspace Clearance Warning Legend: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 3 FEET MINIMUM."

D. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Baked-enamel warning signs or Metal-backed, butyrate warning signs.

1. Apply to exterior of door, cover, or other access.
2. For equipment with multiple power or control sources, apply to door or cover of equipment, including, but not limited to, the following:

a. Power-transfer switches.
b. Controls with external control power connections.

3.4 SELECTION OF IDENTIFICATION PRODUCTS FOR COMMUNICATIONS, CONTROL, AUXILIARY, AND LIFE SAFETY SYSTEMS

A. Comply with Section 27 0528 "Pathways for Communications Systems" and Section 27 1100 "Communications Equipment Room Fittings."

3.5 INSTALLATION

A. Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment. Install access doors or panels to provide view of identifying devices.

B. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes typical for electrical equipment environments specified in Section 26 0011 "Facility Performance Requirements for Electrical."

C. Paint: Comply with requirements in painting Sections for paint materials and application requirements. Retain paint system applicable for surface material and location (exterior or interior).

D. Fasteners for Labels and Signs: Self-tapping, stainless steel screws or stainless steel machine screws with nuts and flat and lock washers.

E. Verify and coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and operation and maintenance manual. Use consistent designations throughout Project.

F. Install identifying devices before installing acoustical ceilings and similar concealment.

G. Verify identity of item before installing identification products.

H. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and operation and maintenance manual.

I. Apply identification devices to surfaces that require finish after completing finish work.

J. Install signs with approved legend to facilitate proper identification, operation, and maintenance of electrical systems and connected items.

K. Elevated Components: Increase sizes of labels, signs, and letters to those appropriate for viewing from floor.

L. Vinyl Wraparound Labels:

1. Secure tight to surface of raceway or cable at location with high visibility and accessibility.
2. Attach labels that are not self-adhesive type with clear vinyl tape, with adhesive appropriate to location and substrate.

M. Snap-Around Labels: Secure tight to surface at location with high visibility and accessibility.

N. Self-Adhesive Wraparound Labels: Secure tight to surface at location with high visibility and accessibility.

O. Snap-Around Color-Coding Bands: Secure tight to surface at location with high visibility and accessibility.

P. Marker Tapes: Secure tight to surface at location with high visibility and accessibility.

Q. Self-Adhesive Vinyl Tape: Secure tight to surface at location with high visibility and accessibility.

1. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for minimum distance of 6 inch where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding.

R. Floor Marking Tape: Apply stripes to finished surfaces following manufacturer's instructions.

S. Underground Line Warning Tape:

1. During backfilling of trenches, install continuous underground-line warning tape not less than 12 inch directly above cables or raceways buried 18 inch or more below grade. Use multiple tapes where width of multiple lines installed in common trench or concrete envelope exceeds 16 inch overall.
2. Install underground-line warning tape for direct-buried cables and cables in raceways.

T. Metal Tags:

1. Place in location with high visibility and accessibility.
2. Secure using UV-stabilized cable ties.

U. Nonmetallic Preprinted Tags:

1. Place in location with high visibility and accessibility.
2. Secure using UV-stabilized cable ties.

V. Write-on Tags:

1. Place in location with high visibility and accessibility.
2. Secure using UV-stabilized cable ties.

W. Baked-Enamel Signs: Attach signs that are not self-adhesive type with mechanical fasteners appropriate to location and substrate.

X. Metal-Backed Butyrate Signs: Attach signs that are not self-adhesive type with mechanical fasteners appropriate to location and substrate.

Y. Laminated Acrylic or Melamine Plastic Signs: Attach signs that are not self-adhesive type with mechanical fasteners appropriate to location and substrate.

END OF SECTION 26 0553

SECTION 31 1000 - SITE CLEARING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Provide materials, equipment and transportation and perform labor as required for removing natural and artificial objectionable materials from the work area in advance of grading operations.

1.02 RELATED DOCUMENTS

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

1.03 RELATED WORK SPECIFIED ELSEWHERE

A. Section 312000: Site Grading

B. Section 312500: Construction Storm Water Pollution Prevention

1.04 GEOTECHNICAL ENGINEERING REPORT / GEOTECHNICAL ENGINEER

A. A geotechnical engineering report has not been prepared for this project.

1. Copies of this report and any addenda are available for review at the office of the Owner's Representative.

B. The Geotechnical Engineer employed by the Owner to perform observation, testing and reporting during construction in accordance with the contract documents is Pacific Materials Laboratory, Inc., Telephone (805) 964-6901 (hereinafter the Construction-Phase Geotech).

1.05 STANDARD SPECIFICATIONS

A. Construction materials and methods shall be in accordance with the *Standard Specifications for Public Works Construction*, 2021 edition (SSPWC), published by Building News, Inc., except as modified or otherwise specified herein (hereinafter the Standard Specifications).

B. In case of conflict between the Standard Specifications and the Project Specifications, the Project Specifications shall govern.

1.06 REFERENCE SPECIFICATIONS

A. Construction materials and methods shall be in accordance with the site-specific recommendations contained in the Geotechnical Engineering Report(s) referenced in Paragraph 1.04 of this Section.

B. Storm water pollution prevention materials and methods shall be in accordance with the *Stormwater Best Management Practice Handbook: Construction*, January 2015 edition, published by the California Stormwater Quality Association.

C. In case of conflict between the Standard Specifications and the Reference Specifications, the Reference Specifications shall govern.

D. In case of conflict between the Reference Specifications and these Project Specifications, the more stringent provision shall govern, as determined by the Owner's Representative and the Engineer.

1.07 REGULATORY REQUIREMENTS

A. Construction shall comply with the *California Code of Regulations, Title 24, Part 2 (*the *California Building Code),* most recent effective edition.

1.08 JOB SITE CONDITIONS

A. Contractor shall visit the site and shall familiarize himself with existing site conditions. Contractor shall make his own interpretations of site conditions and shall not be relieved of liability under the contract for any loss he may sustain as a result of any variance between conditions indicated by or deduced from said site visit and the actual conditions encountered during the progress of work.

B. Contractor shall assume sole and complete responsibility for job site conditions during the course of construction of this project including safety of all persons and property; this requirement shall apply continuously and not be limited to normal working hours.

C. Contractor shall assume sole and complete responsibility for protection of public and private property in the vicinity of the job site and shall, at Contractor's expense, repair or replace to original condition all existing improvements within or in the vicinity of the job site which are not designated for removal and which are damaged or removed as a result of Contractor's operations.

D. Contractor shall defend, indemnify and hold design professionals harmless from all liability and claims, real or alleged, in connection with the performance of work on this project, excepting liability arising from the sole negligence of design professionals.

E. Existing buried pipelines and conduits known to the preparer of the Drawings are shown on the Drawings. However, all such pipelines, conduits and structures may not be shown and the locations of those shown are approximate only and have not been independently verified by the preparer of the Drawings.

1. Contractor shall independently verify or determine the presence of existing buried pipelines, conduits and structures within the work area with the utility companies, the water and sanitary agencies, and the property Owner. Before commencing work, Contractor shall determine the exact locations including depths of all existing underground pipelines, conduits and structures, including service connections, which may affect or be affected by his operations and shall mark these locations at the site with paint or flags.

2. Contractor shall be fully responsible for any and all damages which might be occasioned by Contractor's failure to exactly locate and preserve any and all underground pipelines, conduits and structures.

3. Upon becoming aware of existing buried pipelines, conduits or structures not shown or located differently than shown on the Drawings, Contractor shall immediately notify the Owner's Representative and the owner of the pipeline, conduit or structure by telephone and in writing. If such pipeline, conduit or structure affects or is affected by the work, Contractor shall obtain written permission and direction before proceeding with the work, excepting that in an emergency affecting safety of life, work or adjacent property, Contractor shall act at once without instructions to prevent injury or loss.

F. Contractor shall accept the site as it exists prior to start of construction and shall do all grading work necessary to accomplish earthwork as specified herein and to the finish grades and pavement subgrades shown on or indicated by the Drawings.

1.09 EARTHWORK QUANTITIES

A. Any earthwork quantity estimates which may be given on the Drawings are approximate only. Said estimates are based on the approximate difference between existing grades and proposed finish grades or pavement subgrades as indicated on the Drawings and do not include consideration for losses due to clearing and demolition operations, material shrinkage, consolidation and subsidence, or for landscaping improvements.

B. Contractor shall perform an independent earthwork quantity analysis on which to base his bid. Contractor shall not be relieved of liability under the contract for any loss he may sustain as a result of any variance between earthwork estimates which may be given on the Drawings and the actual earthwork quantities required to accomplish grading as specified herein and as necessary for construction of improvements to the finish grades called for on the Drawings.

1.10 RECORD DOCUMENTS

A. Comply with requirements of Division 1, “Project Record Documents” section, and following:

1. Accurately record location of pipelines, conduits and structures which are abandoned in place, including depth below finish grade, for Record Documents.

2. Accurately record changes in construction from that called for on the Drawings and Specifications, including unexpected physical conditions and unmarked or inaccurately marked existing pipelines, conduits and structures, for Record Documents.

1.11 QUALITY ASSURANCE

A. A Geotechnical Engineer will be employed by the Owner to perform observation, testing and reporting during construction in accordance with the contract documents (hereinafter the Construction-Phase Geotech).

B. Observation

1. Clearing and grubbing operations shall be periodically observed by the Construction-Phase Geotech.

2. Demolition operations requiring excavation more than 12 inches below existing ground surface shall be continuously observed by the Construction-Phase Geotech.

3. All plugging of pipelines or conduits allowed to be abandoned in place outside of building and pavement areas shall be observed by the Construction-Phase Geotech.

4. Contractor shall notify the Geotechnical Engineer, the Construction-Phase Geotech, and the Owner's Representative at least five (5) working days prior to commencement of clearing operations.

5. The cost of observation by the Construction-Phase Geotech will be borne by the Owner.

6. The Construction-Phase Geotech shall certify that earthwork was properly completed in conformance with the Drawings and Specifications. Certification shall be in the form of a report to the Owner's Representative.

PART 2 - MATERIALS

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PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS

A. Prior to beginning construction, perform a thorough field review of existing improvements within the jobsite; record a video of the entire site, including adjacent improvements and / or properties along the site boundary and street frontage, and provide a copy of the video in DVD format to the Owners Representative for approval.

B. Promptly notify the Owner's Representative and the agency having jurisdiction by telephone and in writing upon discovery of, and before disturbing, any physical conditions differing from those represented by approved Drawings and Specifications.

C. Before commencing clearing or other excavation, determine the exact location of all existing underground pipelines, conduits and structures, including service connections, and mark these locations at the site with paint or flags. Maintain these location markers for the duration of construction.

D. Section 4215.5 through 4217 of the government code of the State of California requires that, two working days prior to commencing any excavation, *Underground Service Alert of Southern California* be notified by telephone, toll free: 1-800-422-4133, for the assignment of an inquiry identification number. Before commencing clearing or other excavation, obtain the USA inquiry identification number and independently verify that each utility company or other owner of subsurface facility has located and physically marked their subsurface facilities in the area of work.

E. Before commencing clearing or other excavation, contact each utility company or other owner of subsurface facilities and verify whether or not a representative will be present before or during excavation and determine any specific requirements for excavation in the vicinity of each subsurface facility.

3.02 CLEARING AND GRUBBING

A. Prior to commencing grading or trenching operations, clear the existing ground surface of areas to be graded or trenched of all vegetation (except trees indicated on the Drawings to remain), whether living or dead, including roots and root structures, as well as all trash and debris, under the observation of the Construction Phase Geotech.

B. Prior to commencing grading or trenching operations, excavate and remove from areas to be graded or trenched all existing undocumented or non-complying fill and soil containing debris, organics, pavement and other unsuitable material, as determined by the Construction Phase Geotech.

C. If, during the removal and scarification process, excessive root structures are encountered, these areas shall be deep ripped in two directions to the depth of the root structure after which the disturbed soils and the roots shall be completely removed and the resulting

cavities shall be scarified and processed to receive fill in accordance with recommendations contained in Section 312000.

D. Stockpile surface soils containing organic material where directed by the Owner's Representative for later use in areas to be seeded or planted; coordinate this operation so that upon completion of the project, all excess material is removed from the job site and finish grades are as called for on the Drawings and as specified herein.

3.03 DEMOLITION

A. Where demolition activities are indicated on the Drawings or called for in the Specifications, clear old pavements, foundations, slabs, curbs, gutters, abandoned pipelines and conduits, and soils contaminated during demolition operations, as determined by the Construction Phase Geotech, except where such clearing operations may jeopardize existing trees or structures to remain ("jeopardize" with respect to a tree shall mean excavation within the dripline and with respect to a structure shall mean excavation below a line projected downward at a 2 horizontal to 1 vertical slope from a point 9 inches above the bottom of the foundation); in such case, request direction form the Owner's Representative before proceeding with the work.

B. In addition to demolition which may be indicated on the Drawings or called for in the Specifications, make a thorough search for abandoned facilities such as septic systems, fuel or water storage tanks, and pipelines or conduits. Remove any such abandoned facilities encountered, except where such removal operations may jeopardize existing trees or structures to remain.

C. Abandoned facilities shall not remain in place within building and pavement areas. Building area is defined as that area within, and extending a minimum of 5 feet outside of, the perimeter of the building foundation and the perimeter of steps, landings, patios, walkways and the like which are contiguous with the building. Pavement area is defined as that area within, and extending a minimum of 1 foot outside of, the limits of asphalt or concrete pavement and the limits of curb, gutter, and sidewalk contiguous with the pavement.

D. If pipelines or conduits are allowed to be abandoned in place outside of building and pavement areas, seal all exposed openings larger than 6 inches in diameter with stiff concrete placed within the pipeline/conduit to a minimum of three (3) lineal feet beyond the opening and rodded to remove voids; provide watertight cap or plug for pipelines / conduits 6 inches or less in diameter. All such sealing operations shall be observed by the Construction-Phase Geotech.

E. If catch basins, vaults or manhole structures are allowed to be abandoned in place outside of building and pavement areas, remove the top and walls to 24" minimum below finish grade, plug inlet and outlet openings per paragraph D above and backfill the void within the structure with 2-sack cement sand slurry, under the observation and testing of the construction phase Geotech.

3.04 TREE REMOVAL

A. Where trees are called for to be removed, such removal shall include the stump and all roots within the original drip line to 24 inches minimum below existing or finish grade, whichever is lower, and disposal of all material off site.

3.05 BACKFILLING VOIDS

A. Immediately replace voids or disturbed areas created during clearing and demolition operations, and which extend below the recommended overexcavation depth, with compacted fill. Do not place any fill until the underlying soil has been observed by the Construction-Phase Geotech. All fill and backfill shall be observed, tested and approved by the Construction-Phase Geotech.

3.06 CONTAMINATED SOIL

A. If abandoned septic tanks or fuel tanks or other potential sources of contamination or hazardous waste are encountered or if soil which appears to be contaminated is encountered, immediately notify the Owner's Representative.

3.07 DUST CONTROL

A. Contractor shall be responsible for control of dust during the entire construction period and for any damage caused by dust resulting from Contractor's operations.

B. Employ labor, equipment and methods required to prevent construction operations from producing dust damaging to persons, property, vegetation and animals or causing a nuisance to persons occupying buildings in the vicinity of the job site. Continue dust abatement measures until authorized by the Owner’s Representative to discontinue them. Contractor shall be responsible for damage caused by dust resulting from his operations.

C. During times of earth disturbance or movement, monitor the amount of dust raised by the activity and water the areas being disturbed as needed to prevent dust from leaving the project site.

D. Impose a speed limit of 15 miles per hour for operation of construction vehicles on unpaved or disturbed areas.

E. Monitor the dust levels on access roads and apply water as needed to prevent dust from leaving the road areas.

F. Ensure that trucks transporting material form the site are tarped before leaving the site with tarps sufficiently secure to remain tarped to the point of disposal.

G. Cover stockpiled soil materials as required to prevent wind-blown dust.

3.08 NOISE CONTROL

A. Keep noisy equipment as far as possible from the site boundaries.

B. Install stationary equipment in enclosures.

C. Install factory-standard silencing equipment on power-operated equipment.

3.09 EROSION AND SEDIMENTATION CONTROL

A. Contractor shall be responsible for control of erosion and sediment transport during the entire construction period and for any damage caused by erosion or sediment transport resulting from Contractor's operations.

B. When a Storm Water Pollution Prevention Plan (SWPPP) is included with the Drawing Set, implement and maintain erosion and sedimentation control measures in accordance with the SWPPP and Section 312500 of these Specifications.

C. When a SWPPP is not included with the Drawing Set, develop, implement and maintain sedimentation and erosion control measures in accordance with Section 312500 of these Specifications and with the *Construction BMP Online Handbook*, January 2015 edition, available online from the California Stormwater Quality Association

3.10 TREE PROTECTION

A. Protect existing trees and other vegetation indicated to remain in place against: unnecessary cutting, breaking or skinning of roots; skinning and bruising of bark; smothering of trees by stockpiling construction materials or excavated materials within drip line; excess foot or vehicular traffic within drip line; parking of vehicles within drip line.

B. Provide temporary guards to protect trees and vegetation to be left standing.

C. Water trees and other vegetation to remain within limits of contract work as required to maintain their health during course of construction operations.

D. Provide protection for roots over 1-1/2 inch diameter which are cut during construction operations.

1. Coat cut faces with an emulsified asphalt, or other acceptable coating, formulated for use on damaged plant tissues.

2. Temporarily cover exposed roots with wet burlap to prevent roots from drying out; cover with earth as soon as possible.

E. Employ a licensed Arborist to supervise work within the drip line of trees to remain. Replace trees which cannot be repaired and restored to full-grown status, as determined by Arborist.

F. Repair or replace trees and vegetation indicated to remain which are damaged by construction operations, in a manner acceptable to Owner's Representative.

G. Comply with Landscape Architect's tree protection requirements, if applicable.

3.11 DISPOSAL

A. Remove from the work area, transport to a suitable location, and legally dispose of all unsuitable soil materials, rubbish, and debris resulting from clearing, demolition, and grading operations.

B. Burning is not permitted within the work area.

END OF SECTION

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SECTION 31 2000 - SITE GRADING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Provide materials, equipment and transportation and perform labor as required to complete the site grading as shown on the Drawings, specified herein or implied thereby to carry out the intent thereof.

B. The work includes but is not limited to the following:

1. All excavation to the grades shown on or indicated by the Drawings and as specified herein.

2. All earth fill to the grades shown on or indicated by the Drawings and as specified herein.

3. All import and export of earth material as required to accomplish the finish grades and pavement subgrades shown on or indicated by the Drawings and as specified herein.

4. All conditioning, placement, compaction, and recompaction of earthwork.

5. If found necessary by Construction Phase Geotech, removal and off-site disposal of unsuitable subgrade material and import, placement, and compaction of select soil or of aggregate encapsulated in geotextile, required to backfill void.

1.02 RELATED DOCUMENTS

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

1.03 RELATED WORK SPECIFIED ELSEWHERE

A. Section 311000: Site Clearing

B. Section 312300: Trenching and Backfilling

B. Section 312500: Construction Storm Water Pollution Prevention

C. Section 321216: Asphalt Concrete Paving

1.04 GEOTECHNICAL ENGINEERING REPORT / GEOTECHNICAL ENGINEER

A. A geotechnical engineering report has been not prepared for this project by Pacific Materials Laboratory, Inc., as follows:

1. Copies of this report and any addenda are available for review at the office of the Owner's Representative.

B. The Geotechnical Engineer employed by the Owner to perform observation, testing and reporting during construction in accordance with the contract documents is Pacific Materials Laboratory, Inc., Telephone (805) 964-6901 (hereinafter the Construction-Phase Geotech).

1.05 STANDARD SPECIFICATIONS

A. Construction materials and methods shall be in accordance with the *Standard Specifications for Public Works Construction,* 2021 edition (SSPWC), published by Building News, Inc., except as modified or otherwise specified herein (hereinafter the Standard Specifications).

B. In case of conflict between the Standard Specifications and these project specifications, the project specifications shall govern.

1.06 REFERENCE SPECIFICATIONS

A. Construction materials and methods shall be in accordance with the site-specific recommendations contained in the Geotechnical Engineering Report(s) referenced in Paragraph 1.04 of this Section.

B. Where called for on the Drawings or in these Specifications, construction materials and methods shall be in accordance with the *Standard Specifications and Standard Plans of the State of California Department of Transportation*, most recent effective editions (CalTrans Standards). Where Metric Units of measure are used in the referenced CalTrans Standards, the equivalent English Units shall be used.

C. Storm water pollution prevention materials and methods shall be in accordance with the *Construction BMP Online Handbook,* January 2015 edition, available online from the California Stormwater Quality Association.

D. In case of conflict between the Standard Specifications and Reference Specifications, the Reference Specifications shall govern.

E. In case of conflict between Reference Specifications / Details and the Project Specifications / Details, the more stringent provisions shall govern, as determined by the Owner's Representative and the Engineer.

1.07 REGULATORY REQUIREMENTS

A. Construction shall comply with the California *Code of Regulations, Title 24, Part 2 (*the *California Building Code),* most recent effective edition.

B. Where the work site is within the unincorporated area, grading shall conform to the *Ventura County Grading Ordinance.*

C. Where the work site is within the city limits, grading shall conform with the *Ventura City Grading Code.*

1.08 SUBMITTALS

A. Provide submittals according to the Conditions of the Contract and Division 1 “Submittal Procedures” section.

B. Refer to “Submittal Requirements and Schedule” at the end of this section.

1.09 JOB SITE CONDITIONS

A. Contractor shall visit the site and shall familiarize himself with existing site conditions. Contractor shall make his own interpretations of site conditions and shall not be relieved of liability under the contract for any loss he may sustain as a result of any variance between conditions indicated by or deduced from said site visit and the actual conditions encountered during the progress of work.

B. Materials are assumed to be earth and material that can be worked with ordinary earthmoving equipment. If rock is encountered within the limits of construction, adjustments will be made in the contract in accordance with the Owner's Representative's instructions. Rock is defined as any stone or boulder that cannot be removed with power equipment without using explosives.

C. Contractor shall assume sole and complete responsibility for job site conditions during the course of construction of this project including safety of all persons and property; this requirement shall apply continuously and not be limited to normal working hours.

D. Contractor shall assume sole and complete responsibility for protection of public and private property in the vicinity of the job site and shall, at Contractor's expense, repair or replace to original condition all existing improvements within or in the vicinity of the job site which are not designated for removal and which are damaged or removed as a result of Contractor's operations.

E. Contractor shall defend, indemnify and hold design professionals harmless from all liability and claims, real or alleged, in connection with the performance of work on this project, excepting liability arising from the sole negligence of design professionals.

F. Existing buried pipelines and conduits known to the preparer of the Drawings are shown on the Drawings. However, all such pipelines, conduits and structures may not be shown and the locations of those shown are approximate only and have not been independently verified by the preparer of the Drawings.

1. Contractor shall independently verify or determine the presence of existing buried pipelines, conduits and structures within the work area with the utility companies, the water and sanitary agencies, and the property Owner. Before commencing work, Contractor shall determine the exact locations including depths of all existing underground pipelines, conduits and structures, including service connections, which may affect or be affected by his operations and shall mark these locations at the site with paint or flags.

2. Contractor shall be fully responsible for any and all damages which might be occasioned by Contractor's failure to exactly locate and preserve any and all underground pipelines, conduits and structures.

3. Upon becoming aware of existing buried pipelines, conduits or structures not shown or located differently than shown on the Drawings, Contractor shall immediately notify the Owner's Representative and the owner of the pipeline, conduit or structure by telephone and in writing. If such pipeline, conduit or structure affects or is affected by the work, Contractor shall obtain written permission and direction before proceeding with the work, excepting that in an emergency affecting safety of life, work or adjacent property, Contractor shall act at once without instructions to prevent injury or loss.

G. Contractor shall accept the site as it exists prior to start of construction and shall do all grading work necessary to accomplish earthwork as specified herein and to the finish grades and pavement subgrades shown on or indicated by the Drawings.

H. Contractor is responsible for preservation or perpetuation of all existing monuments which control subdivisions, boundaries, easements, streets, highways, or other rights-of-way, or which provide horizontal or vertical survey control which will be disturbed or removed due to Contractor’s work. Prior to disturbance or removal of existing monuments, Contractor shall contract with licensed land surveyor to reset monuments or provide permanent witness monuments and file the required documentation with the County Surveyor pursuant to business and Professions Code Section 8771.

1.10 EARTHWORK QUANTITIES

A. Any earthwork quantity estimates which may be given on the Drawings are approximate only. Said estimates are based on the approximate difference between existing grades and proposed finish grades or pavement subgrades as indicated on the Drawings and do

not include consideration for losses due to clearing and demolition operations, material shrinkage, consolidation and subsidence, or for landscaping improvements.

B. Contractor shall perform an independent earthwork quantity analysis on which to base his bid. Contractor shall not be relieved of liability under the contract for any loss he may sustain as a result of any variance between earthwork estimates which may be given on the Drawings and the actual earthwork quantities required to accomplish grading as specified herein and as necessary for construction of improvements to the finish grades called for on the Drawings.

1.11 SHORING AND PROTECTION

A. When making excavations adjacent to existing improvements or adjoining property, Contractor shall provide, install and maintain all sheeting, shoring, bracing and/or other protection necessary to prevent damage to existing improvements and failure of earth banks. Contractor shall repair or replace to original condition, at no cost to Owner, all existing improvements which are not designated for removal and which are removed or damaged as a result of Contractor's operations.

B. Contractor shall provide, install and maintain all sheeting, shoring, bracing and/or other protection necessary to prevent failures of temporary excavations and embankments until earthwork has been completed.

C. Shoring, bracing and other protection, including materials and methods, shall conform with all applicable laws, ordinances, rules and regulations including all requirements of *State of California Construction and General Industry Safety Orders*, the *Occupational Safety and Health Act of 1970*, and the *Construction Safety Act*.

D. The design and detailing of sheeting and shoring systems shall be the responsibility of the Contractor. Contractor shall submit calculations and construction details signed and sealed by a Registered Civil or Structural Engineer to the Owner's Representative prior to beginning excavation.

1.12 RECORD DOCUMENTS

A. Comply with requirements of Division 1, “Project Record Documents” section, and following:

1. Accurately record location of pipelines, conduits and structures which are abandoned in place, including depth below finish grade, for Record Documents.

2. Accurately record changes in construction from that called for on the Drawings and Specifications, including unexpected physical conditions and unmarked or inaccurately marked existing pipelines, conduits and structures, for Record Documents.

3. Employ a Licensed Surveyor to spot check and record finish grades for Record Documents, pursuant to Paragraph 3.17 of this Section.

1.13 QUALITY ASSURANCE

A. A Geotechnical Engineer will be employed by the Owner to perform observation, testing and reporting during construction in accordance with the contract documents (hereinafter referred to as the Construction-Phase Geotech).

B. Material quality and compaction testing procedures shall be in accordance with standards of the *American Society for Testing and Materials* (hereinafter referred to as "ASTM"), latest editions.

C. The compaction standard shall be the latest adoption of the ASTM D-1557 method of compaction, or as determined by the Construction-Phase Geotech.

D. Testing

1. Tests shall be made by the Construction-Phase Geotech who shall determine the type and extent of testing necessary to assure that the earthwork was properly completed in conformance with the Drawings and Specifications.

2. Cost of tests shall be paid for by the Owner. If the tests prove the work not to be in conformance with the Drawings and Specifications, the cost of additional tests shall be paid for by the Owner and backcharged to the Contractor.

E. Observation

1. Earthwork within proposed pavement and building areas shall be continuously observed and earthwork outside of building and pavement areas shall be periodically observed by the Construction-Phase Geotech to ensure compliance with the Drawings and Specifications. Contractor shall notify the Geotechnical Engineer, the Construction-Phase Geotech, and the Owner's Representative at least five (5) working days prior to commencement of grading operations.

2. The cost of observation by the Construction-Phase Geotech shall be borne by the Owner.

3. The Construction-Phase Geotech shall certify that earthwork was properly completed in conformance with the Drawings and Specifications. Certification shall be in the form of a report to the Owner's Representative.

F. All import earth fill material shall be evaluated and approved by the Construction-Phase Geotech and shall be approved by the Owner's Representative prior to importing.

G. Employ a Licensed Surveyor to lay out the work, set grade stakes, check forms, check surface of pavement base courses, and spot check and record finish grades for the Record Drawings, pursuant to Paragraph 3.17 of this Section and Section 01510 Field Engineering.

PART 2 - MATERIALS

2.01 FILL MATERIAL, GENERAL

A. All fill soils shall be free of oversized rocks and irreducible material (over 3 inches in largest dimension), trash and debris, organics, and deleterious materials. Rocks and irreducible material no larger than 3 inches may be blended into the fill in a sufficient soil matrix such that nesting and voids do not occur and the material can be properly compacted, under the observation of the Construction-Phase Geotech.

2.02 FILL MATERIAL, ON-SITE

A. On-site soils free of oversize rocks and irreducible material (over 3 inches in largest dimension), trash and debris, organics and deleterious materials may be used as fill, subject to prior review and approval by the Construction Phase Geotech.

B. On-site soils free of oversize rocks and irreducible material, trash and debris, and deleterious materials may be used as fill in areas to be landscaped, subject to prior review and approval by the Landscape Architect and the Construction Phase Geotech.

C. Variation in organic content, expansion potential, and other characteristics of on-site soils within the expected depths of grading should be anticipated. During earthwork operations, on-site soils shall be reviewed and approved for organic content, expansion potential, and other characteristics by the construction-Phase Geotech before being used as fill under building and pavement areas.

2.03 FILL MATERIAL, IMPORT

A. Import earth fill material shall be granular, non-expansive soils which are equal or superior in quality to the on-site soils, as determined by the Construction Phase Geotech prior to importation of the fill material to the site.

B. Import earth fill material shall be evaluated by the Construction-Phase Geotech and shall be approved by the Owner's Representative prior to importing. Contractor shall arrange for the Construction-Phase Geotech to evaluate the proposed material at least five (5) working days prior to commencement of grading operations. The material shall also be

evaluated by the Construction-Phase Geotech upon arrival at the site and intermittently during placement and compaction at the site.

2.04 SUBGRADE STABILIZATION MATERIAL

A. Where recommended by the Construction-Phase Geotech, subgrade stabilization material shall conform to one of the following:

1. Select imported fill soil having an Expansion Index of 30 or less and approved by the Construction-Phase Geotech prior to importation to the site.

2. Gabion rock aggregate (thickness to be specified by Construction-Phase Geotech) imported from Bee Rock Mine, encapsulated with Mirafi 600X geotextile fabric between aggregate and subgrade soil below and Mirafi 140N geotextile fabric between aggregate and base material above.

2.05 EROSION CONTROL MATERIALS

A. FOR SLOPES LESS THAN 5% (20H:1V):

Mulch.

B. FOR SLOPES LESS THAN 10% (10H:1V):

Jute mesh.

C. FOR SLOPES LESS THAN 25% (4H:1V):

North American Green S 75 straw blanket.

D. FOR SLOPES GREATER THAN OR EQUAL TO 25% (4H:1V):

North American Green SC 150 straw / coconut blanket.

E. FOR LINING EARTH / VEGETATED DRAINAGE SWALES:

North American Green P300 Erosion Control / Turf Reinforcement Mat.

PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS

A. Prior to beginning construction, perform a thorough field review of existing improvements within the jobsite; video record the entire site, including adjacent improvements and / or

properties along the site boundary and street frontage, and provide a copy of the video in DVD format to the Owners Representative for approval.

B. Promptly notify the Owner's Representative and the agency having jurisdiction by telephone and in writing upon discovery of, and before disturbing, any physical conditions differing from those represented by approved Drawings and Specifications.

C. Before commencing clearing or other excavation, determine the exact location of all existing underground pipelines, conduits and structures, including service connections, and mark these locations at the site with paint or flags. Maintain these location markers for the duration of construction.

D. Section 4215.5 through 4217 of the government code of the State of California requires that, two working days prior to commencing any excavation, *Underground Service Alert of Southern California* be notified by telephone, toll free: 1-800-422-4133, for the assignment of an inquiry identification number. Before commencing clearing or other excavation, obtain the USA inquiry identification number and independently verify that each utility company or other owner of subsurface facility has located and physically marked their subsurface facilities in the area of work.

E. Before commencing clearing or other excavation, contact each utility company or other owner of subsurface facilities and verify whether or not a representative will be present before or during excavation and determine any specific requirements for excavation in the vicinity of each subsurface facility.

F. Conduct site grading operations to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks or other occupied or used facilities without permission from Owner or authorities having jurisdiction.

3.02 SITE LAYOUT

A. Layout work and set grade stakes as necessary to control earthwork operations such that all grading conforms to the lines and grades called for on the Drawings and as specified herein.

B. If not dimensioned, locate finish grade elevations and features such as swales, ridge lines, etc. by scale from known points shown on the Drawings.

C. Assume uniform gradients or vertical curves, as appropriate, between control elevations shown on the Drawings.

D. Maintain surface drainage gradient on soil or landscaped areas at not less than 2% (1/4" per foot) unless specifically indicated otherwise on the Drawings.

E. Maintain positive drainage away from all structures and, unless specifically indicated otherwise on the Drawings, from all slopes. Provide openings in screen walls and fences to allow uninterrupted flow of surface drainage.

F. Plan elevations shown on soil and landscaped areas are finish grade (finish surface) elevations intended to establish surface drainage control for these areas. During grading operations, subtract thicknesses (subgrade allowances) specified by Landscape Architect for turf, wood chips, mulch, etc. from these elevations to establish finish subgrade.

G. Plan elevations shown on walkways, ramps, steps and other hardscape are intended to establish grading and surface drainage control for these improvements. Adhere to these control elevations unless otherwise necessary for construction of these improvements in conformance with *Building Code* and *A.D.A.* requirements; perform detailed layout for and construct walkways, ramps, steps, and other hardscape in conformance with all building code and accessibility requirements, including those for dimensioning, slope, cross-slope, surface texture, warning curbs, and hand-rails.

H. Drop-off from top of walk or flatwork edge to adjacent finish surface shall not exceed ½ inch (0.04 foot) along the edge and the finish surface cross slope shall not exceed ¼ inch per foot (2%) within 24 inches of the edge unless a 6-inch high warning curb is constructed along the edge and the edge is thickened (deepened) to 6-inches minimum below adjacent finish grade.

3.03 GRADING

A. Perform site clearing operations per Section 311000: Site Clearing hereof.

B. Do all rough and finish grading as necessary to bring the site to the lines and grades called for on the Drawings and as specified in this Section 312000, within the following tolerances:

1. Finish subgrade soil beneath base course shall not vary more than ½ inch (0.04 foot) from the design elevation, slope and cross section, established with due allowance for thicknesses of base course and surfacing. Variations within the specified tolerance shall be compensating such that the average elevation, slope, and cross section conform to those specified per plan.

2. Finish base course for pavements and for walkways, curbs, gutters, driveway aprons, and other pavement-related structures shall not vary more that ½ inch (0.04 foot) from the design elevation, slope and cross section, established with due allowance for thickness of surfacing. Variations within the specified tolerance shall be compensating such that the average elevation, slope, and cross section conform to those specified per plan.

3. Finish grades in landscaped areas or other soil areas not to be surfaced shall not vary more than 1 inch (0.08 foot) above or below the design elevation and cross slope, established with due allowance for thickness of mulch or sod. Variations within the specified tolerance shall be compensating such that the average elevation, slope, and cross section conform to those specified per plan.

C. Import fill material or remove excess material as necessary to conform to the lines and grades called for on the Drawings and as specified herein. Legally dispose of all excess excavation materials off site.

3.04 PREPARATION OF SITE FOR FILL AND SURFACE IMPROVEMENTS

A. Strip a sufficient depth (as determined by the Construction-Phase Geotech) of surface soil from areas to receive fill to remove vegetation (except trees indicated on the Drawings to remain), roots, and other organic material and to remove loose topsoil. Stockpile this material where directed by the Owner's Representative for later use in areas to be seeded or planted. Remove and dispose of all or any remaining portion of this material when directed by the Owner's Representative or upon completion of the project.

B. Excavate and remove all trash, debris, pavement, organic material and other unsuitable material from areas to receive fill, under the observation of the Construction-Phase Geotech.

C. If, during the removal and scarification process, excessive root structures are encountered, deep rip these areas in two directions to the depth of the root structure, completely remove the disturbed soils and the roots, and scarify and process the resulting cavities to receive fill in accordance with the provisions of this section.

D. Remove existing undocumented or non-complying fill and loose earth from areas to receive fill and replace depressions or disturbed areas left from removals with compacted fill, under the observation and testing of the Construction-Phase Geotech.

E. Before placing any fill material, request review of the exposed in-place soils by, and prepare these soils to receive fill as recommended by, the Construction-Phase Geotech, including:

1. Correcting any soft, overwet or pumping areas, as recommended

2. Overexcavating or scarifying, moisture conditioning, and recompacting as recommended and at least the upper 8 inches to at least 90% of maximum density

F. Construct a keyway at the toe of all fill slopes which are to be constructed on natural slopes which are inclined at an angle of 5 horizontal to 1 vertical or steeper. This key shall be a minimum of 12 feet in width, shall extend a minimum of 30 inches below the original undisturbed ground surface measured at the toe of the slope, shall extend a minimum of 4

feet beyond the toe of the slope, and shall be inclined slightly into the hill. Confirm design of keyway with Construction Phase Geotech prior to constructing; the need to protect certain existing buried facilities may allow for modification to keyway dimensions.

G. Construct benches in areas to receive fill where existing surface slope is 1 or more vertical in 5 horizontal. Confirm design of benches with Construction-Phase Geotech prior to constructing.

3.05 PLACEMENT OF FILL, GENERAL

A. Do not place any fill material, including aggregate or sand base material, until the ground surface prepared to receive it has been reviewed and approved by the Construction-Phase Geotech and by the Owner's Representative.

B. During fill placement, construct all contact surfaces between undisturbed original ground and compacted fill material on either horizontal or vertical planes and a minimum of 24 inches below the original undisturbed ground surface.

C. Overbuild fill slopes and cut to finish grade to ensure specified compaction in all portions of slope face.

D. Construct fill slopes to the configuration shown on the Drawings and at a maximum inclination of 2 horizontal to 1 vertical; compact slope faces by rolling a sheepsfoot roller or similar compaction equipment over the slope face at vertical lift intervals of 30 inches or less.

E. Spread each layer of fill evenly and blade-mix it thoroughly during spreading to attain a relative uniformity of material within each layer.

F. If moisture content of material is below that sufficient to achieve compaction requirements, add water to and mix the soil to attain a relatively uniform moisture content throughout the material. If moisture content is excessive, aerate the soil by blading or other methods.

G. Place fill materials in layers that can be compacted with the equipment being used and as required by the Construction-Phase Geotechnical Engineer but not more than 6 inches in loose thickness.

H. After each layer has been conditioned and placed, compact the material to the following densities:

1. Structural Fill not otherwise specified: minimum 90% of maximum density

2. Upper 12" of areas to receive landscaping but no other surface improvements: 85% of maximum density

3. Sand layer and upper 6” of subgrade soil beneath sand layer in walkway areas: minimum 95% of maximum density

4. Aggregate base course and upper 9” of subgrade soil beneath aggregate base course in paved areas: minimum 95% of maximum density

I. Remove compacted fill determined by the Construction-Phase Geotech to not meet density requirements and replace and re-compact at Contractor's expense.

3.06 SPECIAL GRADING PROCEDURES UNDER BUILDING AREA

A. These grading procedures apply to all areas beneath, and extending a minimum of 5 feet outside the exterior perimeters of, building structures including adjacent walkways, ramps, stairs, and roof cover support columns.

B. Comply with grading procedures recommended for areas beneath the proposed structures as stipulated in the Geotechnical Engineering Report referenced in Paragraph 1.04 of this Section.

3.07 SPECIAL GRADING PROCEDURE UNDER PAVEMENT AREAS

A. These grading procedures apply to all areas within, and extending a minimum of 1 foot outside of, the limits of asphalt or concrete pavement, the limits of curb, gutter, and sidewalk contiguous with the pavement, and the limits of site walkways, flatwork, ramps and stairs.

B. Excavate existing soil to a depth which removes all existing non-complying fill and disturbed natural soils, as determined by the Construction-Phase Geotechnical Engineer, or to the bottom of the proposed base course, whichever is deeper.

C. Scarify the bottom of excavations exposed pursuant to Paragraph 3.07-B above to a minimum depth of 8 inches and recompact to a minimum of 90 percent of maximum density; at least 9 inches of subgrade material below the aggregate base course in pavement areas and at least 6 inches of subgrade material below the sand course in walkway areas shall be compacted to a minimum of 95 percent of maximum density.

D. For fill required to achieve subgrade elevations, use on-site soil or imported soil meeting the requirements for fill material per Part 2 of this Section. Condition, place, and compact this material to minimum 90% of maximum density to a level at least 9 inches below aggregate base material in pavement areas and at least 6 inches below sand layer in walkway areas. Compact remaining fill to bottom of aggregate base material or sand course to minimum 95% of maximum density.

E. Moisten or dry scarified soil and fill material to near the optimum moisture content before compacting.

F. For those areas where specific thicknesses of surfacing and base courses are given on the Detail Drawings, finish grading to required subgrade elevations.

G. For those areas where estimated thicknesses of surfacing and base courses are given on the Detail Drawings, bring the areas to rough subgrade elevations based on the estimated thicknesses; request determination by the Construction-Phase Geotech of actual thickness of pavement surfacing and base courses based on the results of R-Value tests to be conducted on the rough subgrade material and the Traffic Index(es) shown on the Detail Drawings; perform additional grading if necessary to adjust subgrade elevations to accommodate the final pavement structural section thickness.

H. Proof-roll finish subgrade with heavy, rubber-tired construction equipment under the observation of the Construction Phase Geotech; surface shall be firm and unyielding. Any areas found to be yielding under the wheel loads of the equipment shall be stabilized.

3.08 STABILIZING SUBGRADE

A. If determined to be necessary by the Construction-Phase Geotech pursuant to Paragraph 3.04E or 3.07H above, stabilize subgrade soil by one of the following measures, subject to the approval of the Geotech:

1. Excavate to the recommended depth below the exposed in-place soil surface, remove unsuitable material, and dispose of off-site; import, place, and compact select fill soil conforming to Paragraph 2.04 above as necessary to fill the void created; all under the observation and testing of the Construction-Phase Geotech.

2. Excavate to the recommended depth below the exposed in-place soil surface, remove unsuitable material, and dispose of off-site; import, place, and compact gabion rock aggregate encapsulated with geotextile fabric conforming to Paragraph 2.04 above between the aggregate and subgrade soil below and between the aggregate and base material above, to fill the void created; all under observation and testing of Construction-Phase Geotech.

3.09 SPECIAL REQUIREMENT FOR LANDSCAPE CONTRACTOR

A. Landscape Contractor shall remove from the site and properly dispose of all earth spoil from plant holes and pipe trenches; excess soil and/or mulch shall not be placed or spread at the site.

3.10 EROSION CONTROL / REVEGETATION

A. As required by storm water pollution prevention regulations, implement revegetation of each disturbed soil area within 2 weeks after completion of construction resulting in soil disturbance, unless additional disturbance will occur within 3 weeks.

B. Where Landscaping Plans and Specifications are included with the Contract Documents, construct landscaping and irrigation in accordance therewith.

C. Where Landscaping Plans and Specifications are not included with the Contract Documents or are included but do not address disturbed soil areas, construct hydroseeding as follows:

1. Evenly place and spread top soil stockpiled pursuant to Paragraph 3.04A above, across the disturbed area and compact to 85% of maximum density to the finish grades called for on the Drawings.

2. Request seed mix specification from District / School, including fertilizer, mulch and stabilizer. Provide, mix, and apply hydroseeding in accordance with the supplier's instructions.

3. If District / School does not specify seed mix, provide, mix and apply hydroseeding in accordance with Section 26-3.04B of the Caltrans Standards; hydroseeding components shall be as follows:

a. SEED MIX ONE (permanent irrigation not available):

blando brome	40%	
zorro annual fescue	8%	
lana vetch	12%	
rose clover	15%	
crimson clover	15%	
sub clover	10%	
Total	100%	applied at 350 lbs/acre

b. SEED MIX TWO (permanent irrigation available):

Sports Turf Pro Mix available from S&S Seeds, applied at 500 lbs/acre

c. FERTILIZER:

Gro-Power Plus, applied at 300 lbs/acre

d. MULCH:

Wood cellulose fiber, applied at 2,000 lbs/acre

e. STABILIZER:

Ecology Control M Binder, available from S&S, applied at 75 lbs/acre

3. Provide and install erosion control materials per Section 2.05 hereof on all disturbed areas in accordance with the manufacturer's installation guidelines.

4. Unless permanent irrigation is in place, provide manpower, materials and equipment as necessary to irrigate hydroseeded areas until plants are dense and growing, as determined by the Owner's Representative.

5. Where permanent irrigation system is in place, repair piping, valves, valve boxes, and sprinkler heads and adjust as necessary for compatibility with new finish grades and site configuration.

3.11 CONTAMINATED SOIL

A. If abandoned septic tanks or fuel tanks or other potential sources of contamination or hazardous waste are encountered or if soil which appears to be contaminated is encountered, immediately notify the Owner's Representative.

3.12 DUST CONTROL

A. Contractor shall be responsible for control of dust during the entire construction period and for any damage caused by dust resulting from Contractor's operations.

B. Employ all labor, equipment and methods required to prevent construction operations from producing dust in amounts damaging to person, property, vegetation and animals or causing a nuisance to persons occupying buildings in the vicinity of the job site. Continue dust abatement measures until relief is granted by the Owner's Representative.

C. During times of earth disturbance or movement, monitor the amount of dust raised by the activity and water the areas being disturbed as needed to prevent dust from leaving the project site and to create a crust after each day's activities cease.

D. Impose a speed limit of 15 miles per hour for operation of construction vehicles on unpaved or disturbed areas.

E. Monitor the dust levels on access roads and apply water as needed to prevent dust from leaving the road area.

F. Ensure that trucks transporting material from the site are tarped before leaving the site and remain tarped to the point of disposal.

G. Cover stockpiled soil materials to prevent wind-blown dust.

3.13 NOISE CONTROL

A. Keep noisy equipment as far as possible from the site boundaries.

B. Install stationary equipment in enclosures.

C. Install factory-standard silencing equipment on power-operated equipment.

3.14 EROSION AND SEDIMENTATION CONTROL

A. Contractor shall be responsible for storm water pollution prevention including control of erosion and sediment transport during the entire construction period and for any damage caused by pollution resulting from Contractor's operations.

B. When a Storm Water Pollution Prevention Plan (SWPPP) is included with the Contract Documents, implement and maintain pollution prevention measures in accordance with the SWPPP and Section 312500 of these Specifications.

C. When a SWPPP is not included with the Drawing Set, develop, implement and maintain sedimentation and erosion control measures in accordance with Section 312500 of these Specifications and with the *Construction BMP Online Handbook*, January 2015 edition, available online from the California Stormwater Quality Association

3.15 TREE PROTECTION

A. Protect existing trees and other vegetation indicated to remain in place against: unnecessary cutting, breaking or skinning of roots; skinning and bruising of bark; smothering of trees by stockpiling construction materials or excavated materials within drip line; excess foot or vehicular traffic within drip line; parking of vehicles within drip line.

B. Provide temporary guards to protect trees and vegetation to be left standing.

C. Water trees and other vegetation to remain within limits of contract work as required to maintain their health during course of construction operations.

D. Provide protection for roots over 1-1/2 inch diameter which are cut during construction operations.

1. Coat cut faces with an emulsified asphalt, or other acceptable coating, formulated for use on damaged plant tissues.

2. Temporarily cover exposed roots with wet burlap to prevent roots from drying out; cover with earth as soon as possible.

E. Employ a licensed Arborist to supervise work within the drip line of trees to remain. Replace trees which cannot be repaired and restored to full-grown status, as determined by Arborist.

F. Repair or replace trees and vegetation indicated to remain which are damaged by construction operations, in a manner acceptable to Owner's Representative.

G. Comply with Landscape Architect's tree protection requirements, if applicable.

3.16 DISPOSAL

A. Remove from Owner's property, transport to a suitable off-site location, and legally dispose of unsuitable and excess soil materials, rubbish, and debris resulting from clearing, demolition, and grading operations.

B. Burning is not permitted on the Owner's property.

3.17 RECORD SURVEY

A. Employ a Licensed Surveyor to determine by survey and to record the degree of construction conformity to design at select locations, as follows:

1. Flowline elevation of earth swales and channels at 50-foot maximum spacing.

2. Inclination of graded slopes at 50-foot maximum horizontal spacing.

Section continues on next page

3.18 SUBMITTAL REQUIREMENTS AND SCHEDULE

A. Include this form with submittals of this Specification Section, unless a substitute product is being proposed, in which case refer to Division 1, "Substitutions" section, for substitution requests.

Contractor's [Contractor is to acknowledge with initials each submittal included]
Initials:

____ Letter of explanation attached for each submittal not included.

____ All submitted products are as specified.

B. SUBMITTAL SCHEDULE

____ 1. Submit hydro-seed component mix.

____ 2. Submit manufacturer's product data and recommended installation procedures for erosion control blanket.

____ 3. Submit shoring calculations and details as may be required pursuant to Paragraph 1.11 of this Section.

____ 4. Submit manufacturer's product data and recommended installation procedures for geotextile fabric for subgrade stabilization.

END OF SECTION

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SECTION 31 2300 - TRENCHING AND BACKFILLING

PART 1 - GENERAL

1.01 SUMMARY

A. Provide materials, equipment, transportation and labor as required for excavating trenches, dewatering, stabilizing trench subgrade, placing and compacting bedding material, and placing and compacting pipe zone backfill material for piped utility and storm drain piping and structures outside the exterior walls of the buildings.

1.02 RELATED DOCUMENTS

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

1.03 RELATED WORK SPECIFIED ELSEWHERE

A. Section 312500: Construction Storm Water Pollution Prevention

B. Section 334100: Storm Drainage Piping

1.04 STANDARD SPECIFICATIONS

A. Construction materials and methods shall be in accordance with the *Standard Specifications for Public Works Construction,* 2021 edition (SSPWC), published by Building News, Inc., except as modified or otherwise specified herein (hereinafter the Standard Specifications).

B. In case of conflict between the Standard Specifications and the project specifications, the project specifications shall govern.

1.05 REFERENCE SPECIFICATIONS

A. Construction materials and methods shall be in accordance with the site-specific recommendations contained in the Geotechnical Engineering Report(s) for this project.

B. Storm water pollution prevention materials and methods shall be in accordance with the *Stormwater Best Management Practice Handbook: Construction*, January 2015 edition, published by the California Stormwater Quality Association.

C. In case of conflict between the Standard Specifications and the Reference Specifications, the Reference Specifications shall govern.

D. In case of conflict between the Reference Specifications and these project specifications, the more stringent provision shall govern, as determined by the Architect and Engineer.

1.06 REGULATORY REQUIREMENTS

A. Construction shall comply with the *California Code of Regulations, Title 24, Part 2 (*the *California Building Code),* most recent effective edition.

B. Construction shall comply with applicable health and safety laws and standards including rules, orders and regulations of the *State of California Construction and General Industry Safety Orders,* the *Occupational Safety and Health Act of 1970,* and the *Construction Safety Act.*

1.07 SUBMITTALS

A. Provide submittals according to the Conditions of the Contract and Division 1 “Submittal Procedures” section.

B. Refer to “Submittal Requirements and Schedule” at the end of this Section.

1.08 JOB SITE CONDITIONS

A. Contractor shall visit the site and shall familiarize himself with existing site conditions. Contractor shall make his own interpretations of site conditions and shall not be relieved of liability under the contract for any loss he may sustain as a result of any variance between conditions indicated by or deduced from said site visit and the actual conditions encountered during the progress of work.

B. Materials are assumed to be earth and material that can be worked with ordinary trenching equipment. If rock is encountered within the limits of construction, adjustments will be made in the contract in accordance with the Owner's Representative's instructions. Rock is defined as any stone or boulder that cannot be removed with power equipment without using explosives.

C. Contractor shall assume sole and complete responsibility for job site conditions during the course of construction of this project including safety of all persons and property; this requirement shall apply continuously and not be limited to normal working hours.

D. Contractor shall assume sole and complete responsibility for protection of public and private property in the vicinity of the job site and shall, at Contractor's expense, repair or replace to original condition all existing improvements within or in the vicinity of the job site which are not designated for removal and which are damaged or removed as a result of Contractor's operations.

E. Contractor shall defend, indemnify and hold Design Professionals harmless from all liability and claims, real or alleged, in connection with the performance of work on this project, excepting liability arising from the sole negligence of Design Professionals.

F. Existing buried pipelines and conduits known to the Design Professionals are shown on the Drawings. However, all such pipelines, conduits and structures may not be shown and

the locations of those shown are approximate only and have not been independently verified by the preparer of the Drawings.

1. Contractor shall independently verify or determine the presence of existing buried pipelines, conduits and structures within the work area with the utility companies, the water and sanitary agencies, and the property Owner. Before commencing work, Contractor shall determine the exact locations including depths of all existing underground pipelines, conduits and structures, including service connections, which may affect or be affected by his operations and shall mark these locations at the site with paint or flags.

2. Contractor shall be fully responsible for any and all damages which might be occasioned by Contractor's failure to exactly locate and preserve any and all underground pipelines, conduits and structures.

3. Upon becoming aware of existing buried pipelines, conduits or structures not shown or located differently than shown on the Drawings, Contractor shall immediately notify the Owner's Representative and the owner of the pipeline, conduit or structure by telephone and in writing. If such pipeline, conduit or structure affects or is affected by the work, Contractor shall obtain written permission and direction before proceeding with the work, excepting that in an emergency affecting safety of life, work or adjacent property, Contractor shall act at once without instructions to prevent injury or loss.

PART 2 - MATERIALS

2.01 BEDDING AND PIPE ZONE BACKFILL MATERIAL

A. Unless otherwise called for on the Drawings, pipe bedding and backfill material to 12 inches minimum above top of pipe shall be imported clean sand of such particle gradation that 90 to 100 percent of the material shall pass through a No. 4 sieve, less than 5 percent shall pass through a No. 200 sieve, and the Sand Equivalent value of the material is not less than 40. For processed sand, a maximum of 15 percent shall pass through a No. 200 sieve.

B. Bedding material used to stabilize yielding trench subgrade shall be 1/2" x No. 4 crushed rock.

2.02 TRENCH BACKFILL MATERIAL

A. Trench backfill material from 12 inches above the top of pipe to finish grade in unpaved areas or to bottom of aggregate base material in paved areas shall be native soil, or imported soil, meeting the requirements of the Construction-Phase Geotechnical Engineer.

B. Trench backfill material, whether native or imported shall be free of organics and deleterious material and free of lumps or stones larger than 3 inches in maximum dimension.

2.03 CONCRETE HAUNCHING AND ENCASEMENT

A. Where called for on the Drawings, pipe bedding and/or haunching and/or backfill material shall be Portland Cement concrete conforming to Section 321613.13 hereof.

2.04 SAND / CEMENT SLURRY BACKFILL

A. Where called for on the Drawings, material for pipe bedding / pipezone backfill (encasement), for trench backfill, or for trench plugs shall be plant-mixed sand/cement slurry containing not less than 2 sacks (188 pounds) of Type II Portland cement per cubic yard.

PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS

A. Promptly notify the Owner's Representative and the agency having jurisdiction by telephone and in writing upon discovery of, and before disturbing, any physical conditions differing from those represented by approved plans and specifications.

B. Before beginning trenching, locate and expose all existing buried conduits, pipelines and structures which cross or may otherwise interfere with proposed construction. Employ a Licensed Land Surveyor to determine horizontal and vertical locations of potential obstructions, identify any conflicts with proposed construction, and provide this information to Owner's Representative for review. Allow at least five (5) working days for review.

C. Section 4215.5 through 4217 of the government code of the State of California requires that, two working days prior to commencing any excavation, *Underground Service Alert of Southern California* be notified by telephone, toll free 1-800-422-4133, for the assignment of an inquiry identification number. Before commencing trenching, obtain the USA inquiry identification number and independently verify that each utility company or other owner of subsurface facility has located and physically marked their subsurface facilities in the area of the work.

D. Before commencing trenching, contact each utility company or other owner of subsurface facilities and verify whether or not a representative will be present before and/or during excavation and determine any specific requirements for excavation in the vicinity of each subsurface facility.

E. Before beginning work, verify that excavation will not take place below a line projected downward at a 2 horizontal to 1 vertical slope from a point 9 inches above the bottom of existing or proposed structure foundations adjacent to the work; if proposed

trench/foundation geometry is determined to be contrary to this requirement, request direction from Owner's Representative before proceeding with the work.

F. Employ a Licensed Surveyor to provide line and grade control for trench excavation and backfill.

G. Begin trenching for gravity pipelines at the lowest point of discharge and proceed in the upgrade direction.

H. Have compaction of pipe bedding and backfill and of trench backfill tested and reported to the Owner's Representative by the Construction-Phase Geotechnical Engineer.

3.02 SAWCUTTING

For trench to be excavated in existing paved areas, construct initial sawcut line parallel with the proposed pipeline or conduit along the limits of excavation. See Subsection 3.10-B hereof for final sawcut.

3.03 TRENCH EXCAVATION

A. Excavate trench to lines and grades indicated on the Drawings, including due allowance for thickness of bedding material.

B. Request observation of trench subgrade condition by the Construction-Phase Geotech.

3.04 SHORING

A. Provide, install and maintain sheeting and/or shoring systems as necessary to prevent failure of trench walls and as required by applicable laws, ordinances, rules, and regulations including those of the *State of California Construction and General Industry Safety Orders,* the *Occupational Safety and Health Act of 1970,* and the *Construction Safety Act.*

B. Have sheeting and shoring systems designed by a Licensed Civil or Structural Engineer and submit signed and sealed calculations and construction details to the Owner's Representative prior to beginning excavation.

3.05 TRENCH PREPARATION

A. Provide, install and operate dewatering systems as necessary to lower groundwater levels in the trench as directed by the Geotechnical Engineer. Continue dewatering until otherwise approved by the Owner's Representative.

B. Stabilize yielding subgrade where required by the Drawings or as directed by the Geotechnical Engineer.

C. Keep excavations free from water, whether it be from groundwater, rainfall or discharge from existing pipelines. Use pumps if necessary.

D. Request observation of finish trench subgrade condition by the Geotechnical Engineer.

E. Place and compact bedding material to minimum 95% of maximum density. Shape bedding material by hand to conform with bottom of pipe and fittings. Do not place bedding material before trench subgrade has been approved.

3.06 TRENCH BACKFILL AND COMPACTION

A. After piping has been installed and assembled and has been observed and approved by the Owner's Representative, place and compact pipe zone backfill material to minimum 95% of maximum density to 12 inches above pipe in maximum 6-inch lifts. Have compaction density confirmed by testing by the Geotechnical Engineer.

B. Place and compact trench backfill material to finish grade in unpaved areas or to the bottom of the aggregate base course in paved areas in maximum 6-inch lifts. Nesting of lumps or stones is not permitted.

C. Trench backfill compaction shall be to not less than 90% of maximum density; the upper 12" below the aggregate base course in paved areas and the upper 6" below the base layer in walkway areas shall be to not less than 95% of maximum density. Compaction density shall be confirmed by testing and reported to the Owner's Representative by the Construction-Phase Geotechnical Engineer.

D. Trench backfill shall not be placed until pipe zone backfill has been tested and approved.

E. Compaction by flooding or jetting is not permitted.

3.07 SAND / CEMENT SLURRY BACKFILL

A. Where slurry encasement is called for on the Drawings or is determined to be necessary during construction, pipe bedding and pipe zone backfill from 4 inches minimum below to 12 inches above pipe shall be sand / cement slurry conforming to Paragraph 2.04 of this Section.

B. Pipe shall be supported on correct line and grade by concrete blocks, spaced as necessary but not to exceed 4-feet on center. Line and grade shall be confirmed by Licensed Surveyor prior to ordering slurry.

3.08 CONCRETE ENCASEMENT

A. Where concrete encasement is called for on the Drawings or is determined to be necessary during construction, pipe bedding and pipe zone backfill from 4 inches below to 6 inches above pipe shall be concrete.

B. Pipe shall be supported on correct line and grade by concrete blocks, spaced as necessary but not to exceed 4-feet on center. Line and grade shall be confirmed by Licensed Surveyor prior to ordering concrete.

3.09 TRENCH PLUGS

A. Where a trench plug is called for on the Drawings or is determined to be necessary during construction, a minimum 2-foot long excavation shall be made to 12 inches minimum below the trench bottom and into each trench wall. The excavation shall be backfilled with slurry cement per Paragraph 2.04 to 12" minimum above the top of the pipe zone sand.

3.10 EROSION AND SEDIMENTATION CONTROL

A. Contractor shall be responsible for control of erosion and sediment transport during the entire construction period and for any damage caused by erosion or sediment transport resulting from Contractor's operations.

B. When a Storm Water Pollution Prevention and Erosion / Sediment Control Plan (SWPP / ESC Plan) is included with the Drawing Set, implement and maintain erosion and sedimentation control measures in accordance with the Plan and Section 312500 of these Specifications.

C. When a SWPP / ESC Plan is not included with the Drawing Set, develop, implement and maintain sedimentation and erosion control measures in accordance with Section 312500 of these Specifications and with the *Construction BMP Online Handbook,* January 2015 edition, available online from the California Stormwater Quality Association.

3.11 PAVED SURFACE RESTORATION

A. NEW PAVEMENT

1. If trench surfacing is to be included with new pavement or reconstructed pavement, construct pavement structural section in accordance with the Drawings and Specifications.

B. PATCHED PAVEMENT

1. If trench surfacing is to be a patch within an existing A.C. or concrete paved surface to remain, construct as follows:

    a. Construct final sawcut lines 1-foot minimum beyond limits of trench and beyond any areas damaged by construction; final sawcut lines are in addition to those made for initial trench operations.

    b. Construct pavement structural section (thickness of aggregate base and surfacing) to match existing except where trench backfill is slurry cement which shall be carried to the bottom of A.C. or concrete surfacing.

c. Unless waived by Owner's Representative, construct sealcoat over the full width of A.C. surfacing along the full length of the trench.

d. Replace pavement markings and delineation in kind.

3.12 FIELD QUALITY CONTROL

A. Request observation by Owner's Representative after installation and assembly of, but before covering, piping.

B. Request observation and testing by the Construction-Phase Geotechnical Engineer of trench subgrade, bedding, pipe zone backfill, and trench backfill.

3.13 CONTAMINATED SOIL

A. If abandoned septic tanks or fuel tanks or other potential sources of contamination or hazardous waste are encountered or if soil which appears to be contaminated is encountered, immediately notify the Owner’s Representative.

3.14 DUST CONTROL

A. Contractor shall be responsible for control of dust during the entire construction period and for any damage caused by dust resulting from Contractor’s operations.

B. Employ all labor, equipment and methods required to prevent construction operations from producing dust in amounts damaging to persons, property, vegetation and animals or causing a nuisance to persons occupying buildings in the vicinity of the job site. Continue dust abatement measures until relief is granted by the Owner’s Representative.

C. During times of earth disturbance or movement, monitor the amount of dust raised by the activity and water the areas being disturbed as needed to prevent dust from leaving the project site and to create a crust after each day’s activities cease.

D. Impose a speed limit of 15 miles per hour for operation of construction vehicles on unpaved or disturbed areas.

E. Monitor the dust levels on access roads and apply water as needed to prevent dust from leaving the road access.

F. Ensure that trucks transporting material from the site are tarped before leaving the site with tarps sufficiently secure to remain tarped to the point of disposal.

G. Cover stockpiled soil materials as required to prevent wind-blown dust.

3.15 NOISE CONTROL

A. Keep noisy equipment as far as possible from the site boundaries.

B. Install stationary equipment in enclosures.

C. Install factory-standard silencing equipment on power-operated equipment.

3.16 TREE PROTECTION

A. Protect existing trees and other vegetation indicated to remain in place against: unnecessary cutting, breaking or skinning of roots; skinning and bruising of bark; smothering of trees by stockpiling construction materials or excavated materials within drip line; excess foot or vehicular traffic within drip line; parking of vehicles within drip line.

B. Provide temporary guards to protect trees and vegetation to be left standing.

C. Water trees and other vegetation to remain within limits of contract work as required to maintain their health during course of construction operations.

D. Provide protection for roots over 1-1/2 inch diameter cut during construction operations.

1. Coat cut faces with an emulsified asphalt, or other acceptable coating, formulated for use on damaged plant tissues.

2. Temporarily cover exposed roots with wet burlap to prevent roots from drying out; cover with earth as soon as possible.

E. Employ a Licensed Arborist to supervise work within the drip line of trees to remain.

F. Employ a Licensed Arborist to repair or replace trees and vegetation indicated to remain which are damaged by construction operations, in a manner acceptable to Owner's Representative.

3.17 DISPOSAL

A. Remove from the work area, transport to a suitable off-site location, and legally dispose of all unsuitable soil materials, rubbish, and debris resulting from clearing, demolition, and grading operations.

B. Burning is not permitted within the work area.

Section continues on next page

3.18 SUBMITTAL REQUIREMENTS AND SCHEDULE

A. Include this form with submittals of this Specification Section, unless a substitute product is being proposed, in which case refer to Division 1, "Substitutions" section, for substitution requests.

Contractor's Initials:____ [Contractor is to acknowledge with initials each submittal included]

____ Letter of explanation attached for each submittal not included.

____ All submitted products are as specified.

B. SUBMITTAL SCHEDULE

____ 1. Submit sieve analyses for bedding and pipe zone backfill material.

____ 2. Submit Sand Equivalent analyses for bedding and pipe zone backfill material.

____ 3. Submit shoring calculations and details as may be required pursuant to Paragraph 3.04 of this Section.

END OF SECTION 312300

SECTION 31 2500 - CONSTRUCTION STORM WATER POLLUTION PREVENTION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Provide materials, equipment and transportation and perform labor as required for installing, maintaining, repairing and, upon completion of construction, removing temporary storm water pollution prevention devices and collected pollutant material.

1.02 RELATED DOCUMENTS

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

1.03 RELATED WORK SPECIFIED ELSEWHERE

A. Section 311000: Site Clearing

B. Section 312000: Site Grading

C. Section 312300: Trenching and Backfilling

D. Section 321216: Asphalt Concrete Paving

1.04 STANDARD SPECIFICATIONS

A. Construction materials and methods shall be in accordance with the *Standard Specifications for Public Works Construction,* 2021 edition (SSPWC), published by Building News, Inc., except as modified or otherwise specified herein (hereinafter the Standard Specifications).

B. In case of conflict between the Standard Specifications and the Project Specifications, the Project Specifications shall govern.

1.05 REFERENCE SPECIFICATIONS

A. Where called for on the Drawings or in these Specifications, construction materials and methods shall be in accordance with *Construction BMP Online Handbook,* January 2015 edition, available online from the California Stormwater Quality Association.

B. In case of conflict between the Standard Specifications and a reference specification, the reference specification shall govern.

C. In case of conflict between a reference specification and these Project Specifications, the more stringent provision shall govern, as determined by the Owner's Representative and the Engineer.

1.06 REGULATORY REQUIREMENTS

A. Construction shall comply with the *California Code of Regulations, Title 24.*

B. Contractor shall comply with the terms of the *General Permit to Discharge Storm Water Associated with Construction Activity (WQ Order No. 99-08-DWQ).*

1.07 SUBMITTALS

A. Provide submittals according to the Conditions of the Contract and Division 1 "Submittal Procedures" section.

B. Refer to "Submittal Requirements and Schedule" near the end of this Section.

C. Prior to start of construction, execute *Contractor's Storm Water Pollution Prevention Declaration* contained at the end of this section and provide to District's Project Manager with copies to Architect and Engineer.

1.08 DOCUMENTS AT JOB SITE / RESPONSIBILITY FOR IMPLEMENTATION

A. Maintain at the job site a set of the contract document Plan Sheets specifically for purposes of recording thereon the locations, limits, and dates of installation for the various Storm Water Pollution Prevention (SWPP) Best Management Practice Measures (BMP's), over the course of construction.

B. Any Erosion / Sediment Control Plan or Pollution Control Site Map which may be included with the construction documents is based on the site being developed as depicted thereby when the Plan is implemented. These measures may not be suitable at all stages of construction and under all storm conditions, without modification and / or maintenance. Implementation of this Plan by Contractor shall not relieve Contractor of responsibility for construction site pollution control. Contractor shall employ all labor, equipment, materials and methods, shall make all modifications, and shall perform all maintenance necessary to prevent his / her operations from resulting in discharge of pollutants from the site.

1.09 MAINTAINING RECORDS

A. Generate and maintain the following records and, upon request, provide copies to the Owner's Representative; at the completion of construction, deliver these records to the Owner:

1. A log documenting the dates of installation, inspection, and maintenance of the various SWPP BMP's.

2. Photographs with dates imprinted thereon of the SWPP BMP's taken during installation, during inspections, and after maintenance.

B. ANNUAL REPORT

1. Not Applicable.

1.10 JOB SITE CONDITIONS

A. Contractor shall visit the site and shall familiarize himself with existing site conditions. Contractor shall make his own interpretations of site conditions and shall not be relieved of liability under the contract for any loss he may sustain as a result of any variance between conditions indicated by or deduced from said site visit and the actual conditions encountered during the progress of work.

B. Contractor shall assume sole and complete responsibility for job site conditions during the course of construction of this project including safety of all persons and property; this requirement shall apply continuously and not be limited to normal working hours.

C. Contractor shall assume sole and complete responsibility for protection of public and private property in the vicinity of the job site and shall, at Contractor's expense, repair or replace to original condition all existing improvements within or in the vicinity of the job site which are not designated for removal and which are damaged or removed as a result of Contractor's operations.

D. Contractor shall defend, indemnify and hold design professionals harmless from all liability and claims, real or alleged, in connection with the performance of work on this project, excepting liability arising from the sole negligence of design professionals.

E. Existing buried pipelines and conduits known to the preparer of the Drawings are shown on the Drawings. However, all such pipelines, conduits and structures may not be shown and the locations of those shown are approximate only and have not been independently verified by the preparer of the Drawings.

1. Contractor shall independently verify or determine the presence of existing buried pipelines, conduits and structures within the work area with the utility companies, the water and sanitary agencies, and the Owner. Before commencing work, Contractor shall determine the exact locations including depths of all existing underground pipelines, conduits and structures, including service connections, which may affect or be affected by his operations and shall mark these locations with paint or flags.

2. Contractor shall be fully responsible for any and all damages which might be occasioned by Contractor's failure to exactly locate and preserve any and all underground pipelines, conduits and structures.

3. Upon becoming aware of existing buried pipelines, conduits or structures not shown or located differently than shown on the Drawings, Contractor shall immediately notify the Owner's Representative and the owner of the pipeline, conduit or structure by telephone and in writing. If such pipeline, conduit or structure affects or is affected by the work, Contractor shall obtain written permission and direction from the District and the owner of the pipeline, conduit or structure before proceeding with the work, excepting that in an emergency affecting safety of life, work or adjacent property, Contractor shall act at once without instructions to prevent injury or loss.

1.11 STORM WATER POLLUTION PREVENTION PLAN IMPLEMENTATION

A. *Prior to start of construction*, Contractor shall implement BMP's to address the following non-storm water issues which are related to Storm Water Pollution Prevention (SWPP). Contractor shall then maintain, monitor, and modify as necessary these same BMP measures throughout construction:

1. Material tracking off-site.

2. Equipment wash off, refueling and maintenance (if applicable).

3. Hazardous material storage (if applicable).

4. Concrete, paint, and plaster wash off / cleanup (if applicable).

5. Dewatering operations (if applicable).

6. Spill prevention and control.

7. Solid waste management.

8. Hazardous waste management.

9. Contaminated soil management.

10. Sanitary / septic waste management.

11. Liquid waste management.

12. Water conservation practices.

13. Illicit connection / discharge.

14. Potable water and irrigation water runoff / release.

15. Material delivery, storage and use.

B. *Once ground disturbance has begun,* Contractor shall implement, maintain and monitor BMP measures to address storm water related concerns for SWPP, including:

1. Wind erosion (dust) control.

2. Street sweeping and vacuuming.

3. Paving and grinding operations.

4. Concrete finishing (if applicable).

5. Silt fence and gravel bag berms when forecast of rain probability is 40% or greater.

6. Straw bale and sandbag barrier when forecast of rain probability is 40% or greater.

7. Storm drain inlet protection when forecast of rain probability is 40% or greater.

8. Fiber roll berm when forecast of rain probability is 40% or greater.

9. Temporary stream crossings or clear water diversions if water is flowing in the stream or when forecast of rain probability is 40% or greater.

10. Stockpile management when forecast of rain probability is 40% or greater.

C. Contractor shall implement, maintain and monitor other Best Management Practice measures (BMP's), as needed, on a case by case basis.

D. Contractor shall adapt the BMP measures throughout the construction period as necessary to address changing site conditions, construction materials, and construction methods to prevent the discharge of pollutants from the project site.

E. Contractor shall immediately address any deficiencies in implementation or adequacy of the BMP's identified by the Inspector or governing authority.

1.12 FINES

A. Failure of the Contractor to properly implement Best Management Practice measures for Storm Water Pollution Prevention, may result in fines being levied against the Ventura Unified School District (VUSD) by the State Regional Water Quality Control Board (SRWQCB) or other governing authority.

B. Contractor shall make full restitution to the VUSD for any and all fines levied against VUSD by the SRWQCB or other local, State or Federal agencies as a result of the Contractor's failure to maintain records or to implement, maintain and monitor BMP's.

PART 2 - MATERIALS

2.01 STABILIZED CONSTRUCTION ENTRANCE

A. STEEL PLATE / ROCK ENTRANCE

1. Material for roadbed shall be crushed rock, varying between 3 inches and 6 inches in largest dimension.

2. Geotextile fabric for placement between crushed rock and soil subgrade shall be Mirafi 140N non-woven polypropylene, or equivalent approved by the Engineer, suitable for soil separation and filtration.

3. Steel plates for rumble strip shall be 8'-minimum wide by 8'-minimum long plates suitable, unsupported, for H-20 traffic loading. Plates shall be supplied with continuous transverse steel ribs at 4"-maximum spacing; ribs shall be either ½ inch minimum thick by 2 inch minimum high bars or equal-leg 3 inch by 3 inch by ½" minimum thick angles, welded to plate.

B. CRUSHED ROCK ENTRANCE

1. Material for roadbed shall be crushed rock, varying between 3 inches and 6 inches in largest dimension.

2. Geotextile fabric for placement between crushed rock and soil subgrade shall be Mirafi 140N non-woven polypropylene, or equivalent approved by the Engineer, suitable for soil separation and filtration.

C. STEEL PLATE ENTRANCE

1. Steel plate entrance is for use on existing concrete or asphalt concrete paved areas only.

2. Steel plates for rumble strip shall be 8'-minimum wide by 8'-minimum long plates suitable, unsupported, for H-20 traffic loading. Plates shall be supplied with continuous transverse steel ribs at 4"-maximum spacing; cribs shall be either ½ inch minimum thick by 2 inch minimum high bars or equal-leg 3 inch by 3 inch by ½" minimum thick angles, welded to plate.

2.02 SILT FENCE

A. Silt fence fabric shall be a pervious sheet of synthetic polymer composed of at least 85% by weight ethylene, propylene, amide, ester, or vinylidene yarn, woven or non-woven; it shall contain stabilizers and/or inhibitors to resist deterioration by heat, water, and ultra-violet light. The fabric shall conform to the following criteria:

1. The equivalent opening size (U.S. standard sieve) shall be no larger than 70; where discharge would be to stream, lake, or wetland, E.O.S. shall be no larger than 100.

2. The required fabric tensile strength (per A.S.T.M. D-4632) shall be 120 pounds minimum with posts installed at 4-foot spacing.

B. Posts for supporting fence fabric shall be 3 x 3 wood or 1.33 pounds per linear foot steel with a minimum length of 42 inches. Steel posts shall have projections for attaching wire.

2.03 STRAW BALE DIKE / WEIR

A. Straw bales shall be standard size, bound with wire or nylon.

B. The straw bales shall be placed tightly against the ground or pavement surface and one another and shall be hand tamped firmly into place.

2.04 SILT TRAP AT DRAIN INLET

A. Silt trap fabric shall be a pervious sheet of synthetic polymer composed of at least 85% by weight ethylene, propylene, amide, ester, or vinylidene yarn, woven or non-woven; it shall contain stabilizers and / or inhibitors to resist deterioration by heat, water, and ultraviolet light. The fabric shall conform to the following criteria:

1. The equivalent opening size (U.S. Standard sieve) shall be no larger than 70; where discharge would be to stream, lake, or wetland, E.O.S. shall be no larger than 100.

2. The required fabric tensile strength (per A.S.T.M. D-4632) shall be 120 pounds minimum.

B. Where called for on the drawings, common clay bricks or solid masonry blocks shall be used to hold the fabric in place.

2.05 SANDBAG BARRIER

A. Sandbag shall be woven polypropylene, polyethylene or polyamide fabric having minimum unit weight of 4 ounces per square yard and mullen burst strength exceeding 300 pounds per square inch, in conformance with the requirements of ASTM Designation D3786, and having ultraviolet stability exceeding 70%, in conformance with the requirements of ASTM Designation D4355.

B. Each sand-filled bag should have a length of 18 inches, width of 12 inches, thickness of 3 inches, and mass of approximately 33 pounds. Bag dimensions are nominal.

C. All sandbag fill material shall consist of natural or manufactured granular material, or a combination thereof.

2.06 GRAVEL BAG FILTER

A. Gravel bags shall be woven polypropylene, polyethylene or polyamide fabric having minimum until weight of 4 ounces per square yard and mullen burst strength exceeding 300 pounds per square inch, in conformance with the requirements of ASTM designation D3786, and having stability exceeding 70%, in conformance with the requirements of ASTM designation D4355.

B. Each gravel-filled bag should have a length of 18 inches, width of 12 inches, thickness of 3 inches and mass of approximately 33 pounds. Bag dimensions are nominal.

C. Gravel bag filled material should be 0.5 to 1 inch, clean crushed rock, free from clay, organic matter, and other deleterious materials.

PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS

A. Contractor shall implement NPDES Permit Requirements including:

1. Reviewing the Storm Water Pollution Prevention Plan (SWPPP).

2. Amending the SWPPP to address changes in site conditions, construction materials, or construction operations that may affect the discharge of pollutants from the site.

3. Holding a mandatory training seminar with the general contractor's personnel, subcontractors' personnel, and material suppliers' personnel to explain the job requirements related to Storm Water Pollution Prevention; requiring those that attend to sign a training log indicating that they have attended the seminar and that they agree to implement and maintain the BMP's throughout construction.

4. Conducting weekly inspection and maintenance of the in-place BMP's.

5. Conducting inspections of the BMP's before each anticipated storm event and after each actual storm event; making the necessary repairs or modifications at the time of the inspection.

6. Ensuring full compliance with the Permit and implementing all elements of the Storm Water Pollution Prevention Plan, including elimination of all unauthorized discharges and preparation of an annual compliance evaluation.

B. The location and extent of the various BMP's shall be reviewed at the site by the DSA inspector at the beginning of the installation process. Provide 24 hours minimum notice.

C. The locations of the various BMP's may require adjustment due to changing site conditions and additional installations may be required by the inspector.

D. All BMP's shall be inspected and repaired at the end of each work week and, in addition, before and after each storm.

E. Pollutant deposits shall be removed from BMP's after each storm to restore their capacity. Soil material shall be stockpiled such that it cannot again result in sediment transport on- or off-site; other pollutants collected shall be remove from the site and disposed of in a proper and legal manner.

F. During the rainy season, the site shall be maintained such that no sediment or other pollutant-laden runoff enters the storm drainage system or flows offsite.

G. A standby crew shall be provided by the contractor for emergency work during rainstorms and shall remain onsite as needed to maintain BMP's during periods of precipitation.

3.02 STABILIZED CONSTRUCTION ENTRANCE

A. STEEL PLATE / ROCK ENTRANCE

1. Clear the existing ground surface of vegetation and debris and grade the roadbed and immediately downstream of the roadbed to provide positive and controlled drainage in accordance with the plan detail.

2. Place crushed rock over filter fabric.

3. Place steel plates.

B. CRUSHED ROCK ENTRANCE

1. Clear the existing ground surface of vegetation and debris and grade the roadbed and immediately downstream of the roadbed to provide positive and controlled drainage in accordance with the plan detail.

2. Place crushed rock over filter fabric.

C. STEEL PLATE ENTRANCE

1. Sweep clean the existing pavement surface beneath, to either side and immediately upstream and downstream prior to placing steel plates.

2. Place steel plates on top of the existing pavement, paying attention to prevent damage to the existing pavement and where applicable near by existing curbs, walls, etc.

3. Construct cold-mix A.C. conform patches to hold plates in place.

D. MAINTENANCE

1. Require that all employees, subcontractors, and suppliers utilize the stabilized construction entrance.

2. Inspect routinely to verify that steel plates have not moved out of place and that plate or crushed rock is not encroaching into sidewalk or other public right-of-way.

3. Remove soil collected between plate ribs and rock voids as necessary to prevent clogging, at least once a week, and prior to any storm event.

4. For Crushed Rock Entrance: remove, clean and replace rock or reconstruct as necessary to maintain effectiveness of entrance for removing soil from vehicles.

5. Inspect stabilized construction entrance daily and sweep tracked sediment as needed.

3.03 EROSION AND SEDIMENT CONTROL

A. GENERAL

1. Any Erosion / Sediment Control Plan which may be included with the construction documents is based on the site being developed as depicted thereby when the Plan is implemented. These measures may not be suitable at all stages of construction and under all storm conditions, without modification and / or maintenance. Implementation of this Plan by Contractor shall not relieve Contractor of responsibility for construction site erosion control measures. Contractor shall employ all labor, equipment, materials and methods necessary to prevent his / her operations from resulting in discharge from the site of silt (mud) and / or debris.

2. Erosion / sediment control measures shall be in place at anytime during the year when the forecast of rain probability is 40% or greater, for each year, until the site improvements, including grading, paving, drainage devices, and landscaping, have been constructed. Erosion / sediment control measures shall be inspected and repaired as necessary each week and before and after each storm.

3. The location and extent of erosion control measures shall be reviewed at the site by the inspector at the beginning of the installation process. Provide 24 hours minimum notice.

4. The locations of swales, erosion / sediment control berms, barriers, and silt fences may require adjustment due to changing site conditions and additional installations may be required by the inspector.

5. During the rainy season, all erosion / sediment control measures shall be inspected and repaired each week and before and after each storm.

6. Soil and debris deposits shall be removed from erosion control swales and from behind erosion / sediment control berms, barriers, and silt fences after each storm to restore their capacity. The spoil material shall be stockpiled such that it cannot again result in sediment transport on or off-site.

7. During the rainy season, all paved areas shall be kept clear of soil material and debris. The site shall be maintained such that no sediment-laden runoff enters the storm drainage system or sheet-flows offsite.

8. A standby crew shall be provided by the contractor for emergency work during rainstorms and shall remain onsite as needed to maintain BMP's during periods of precipitation.

B. SILT FENCE

1. The height of silt fence shall not exceed 24 inches above grade. On slopes, the fence line shall follow an elevation contour as closely as possible. Where crossing small swales, the fence line shall be curved upstream on each side to direct the flow towards the middle of the fence arc.

2. If possible, the filter fabric shall be cut from a continuous roll to avoid the use of joints. When joints are necessary, filter cloth shall be spliced only at a support post, with a minimum 6-inch overlap, with both ends securely fastened to the post.

3. Posts shall be spaced a maximum of 4 feet apart and be driven securely into the ground to a minimum depth of 12 inches. Subject to inspector's acceptance, chain link construction or permanent fencing may be used to support fabric in lieu of silt fence posts.

4. A trench shall be excavated approximately 6 inches in width and 6 inches in depth along the line of posts on the upslope side of the barrier.

5. Filter fabric shall be stapled or wired to the fence, and 12 inches of the fabric shall extend into the trench. The fabric shall not extend more than 24 inches above the original ground surface. Filter fabric shall not be stapled to existing trees.

6. The location of silt fencing may require adjustment due to changing site conditions and additional installations may be required by the DSA inspector.

C. STRAW BALE DIKE / WEIR

1. Bales shall be placed in a row or as shown on the plan with ends tightly abutting.

2. Each bale shall be embedded in the soil a minimum of 4 inches.

3. Bales shall be securely anchored in place by two stakes driven through the bales. The first stake in each bale shall be driven toward the previously laid bale to force bales together.

4. The locations of straw bale dikes / weirs may require adjustments due to changing site conditions and additional installations may be required by the DSA inspector.

D. SILT TRAP AT DRAIN INLET

1. For larger inlets having steel or cast iron grates, the fabric shall be installed between the frame and grate and then the grate reseated to secure the fabric in place. The fabric panel used to cover the inlet shall be a minimum of 12” larger in square dimension or in diameter than the grate.

2. For smaller inlets, the fabric shall be centered over the in-place grate and held down with bricks or solid masonry blocks. The fabric panel size used to cover the inlet shall be a minimum of 24” square or in diameter.

3. The filter fabric shall be cut from a continuous roll, as no joints will be allowed.

E. SANDBAG BARRIER

1. The height of the sandbag barrier shall be approximately 6”, or two bags.

2. The sandbags shall be placed tightly against the ground or pavement surface and one another and shall be hand tamped into place.

F. GRAVEL BAG FILTER

1. The height of the gravel bag filter shall be approximately 3”, or one bag.

2. The gravel bags shall be placed tightly against the ground or pavement surface and one another and shall be hand tamped into place.

G. MAINTENANCE

1. SILT FENCE

a. Silt fences shall be inspected each week, before a storm, periodically during rainfall, and after each storm. Any required repairs shall be made immediately.

b. Should the fabric on a silt fence decompose or become ineffective during the time the fence or barrier is still necessary, the fabric shall be replaced immediately.

c. Sediment deposits (spoils) shall be removed when depth of deposits reach approximately one-half the height of the silt fence (12-inches maximum) and after each storm. Sediment buildups must be removed when bulges develop in the fence regardless of depth of deposition.

2. STRAW BALE DIKES / WEIRS

a. Straw bale dikes / weirs shall be inspected each week, before a storm, periodically during rainfall, and after each storm. Any required repairs shall be made immediately.

b. Should the straw bales decompose or become ineffective during the time the devices are still necessary, they shall be replaced immediately.

c. Sediment deposits shall be removed when deposits reach approximately one-half the height of the dike / weir.

3. SILT TRAPS AT DRAIN INLET

a. Silt traps shall be inspected each week, before a storm, periodically during rainfall, and after each storm. Any required maintenance or repair shall be made immediately.

b. Sediment deposits (spoil) and other debris trapped on the fabric shall be removed as necessary during rainfall to maintain inflow to the drain inlet.

c. Should the silt trap fabric decompose or become ineffective during the time the devices are still necessary, it shall be replaced immediately.

4. SANDBAG BARRIER

a. Sandbag barrier shall be inspected each week, before a storm, periodically during rainfall, and after each storm. Any required repairs shall be made immediately.

b. Should the fabric of the sandbag decompose during the time the barrier is still necessary, the sandbag shall be removed and replaced immediately. Sandbags exposed to sunlight will need to be replaced every two to three months.

c. Washouts or other damage shall be repaired immediately.

d. Sediment and debris that accumulate behind the sandbag barrier must be periodically removed in order to maintain the barrier effectiveness. Materials should be removed when the accumulation reaches one third of the barrier height.

5. GRAVEL BAG FILTERS

a. Gravel bag filters shall be inspected each week, before storm, periodically during rainfall, and after each storm. Any required repairs shall be made immediately.

b. Should the fabric of the gravel bag decompose during the time the filter is still necessary, the gravel bag shall be removed and replaced immediately. Gravel bags exposed to sunlight will need to be replaced every two to three months.

c. Washouts or other damage shall be repaired immediately.

d. Sediment and debris that accumulates behind the gravel bag filter must be periodically removed in order to maintain the filter effectiveness. Material should be removed when the accumulation reaches one third of the filter height.

6. Spoil material shall be disposed of off-site at an appropriate disposal facility. During construction, the soil material may be temporarily stockpiled on-site in such a manner that it cannot again result in sediment transportation on or off-site.

3.04 POLLUTION CONTAINMENT AREA

A. EARTH BERM

1. Develop containment area by constructing earth berms in accordance with the plan detail. Onsite soil free of organic material and rocks larger than 1” in diameter may be used for the earth berms.

2. Grade the area outside of the earth berms to direct storm runoff away from the containment area.

B. STRAW BERM

1. Sweep clean the existing pavement surface within the containment area, to either side and immediately upstream and downstream prior to constructing the containment berms.

2. Develop containment area by constructing straw bale and sandbag berms in accordance with the plan detail.

C. MAINTENANCE

1. Routinely inspect the containment structure (berm) to ensure that it is intact and provides the required freeboard. Provide additional materials and reform or replace the berm as necessary to maintain its integrity.

2. Regularly remove and properly dispose of offsite all pollutants deposited within the containment area, in accordance with all applicable local, state and federal laws.

3.05 DISPOSAL

A. Remove from the work area, transport to a suitable off-site location, and legally dispose of all unsuitable soil materials, rubbish, debris and other pollutants resulting from construction operations.

B. Burning is not permitted within the work area.

3.06 PROJECT COMPLETION

A. Upon completion of the project, including landscaping and site cleanup, and in a timely manner:

1. Submit to the District the Records listed in Subsection 1.09.

Section continues on next page.

3.07 SUBMITTAL REQUIREMENTS AND SCHEDULE

A. Include this form with submittals of these Specification section.

Contractor's Initials:____ [Contractor is to acknowledge with initials each submittal included]

____ Letter of explanation attached for each submittal not included.

____ All submitted products are as specified.

B. SUBMITTAL SCHEDULE

____ 1. Submit manufacturer's product data indicating tensile strength and E.O.S. for silt fence / silt trap fabric.

____ 2. Submit material type and dimensions for silt fence posts.

____ 3. Submit manufacturer's product data indicating burst strength, ultra violet stability and permeability for sandbags and gravel bags.

____ 4. Submit sieve analysis for gravel bag fill material.

Section continues on next page.

3.08 CONTRACTOR'S STORM WATER POLLUTION PREVENTION DECLARATION

A. As Contractor for this project, we hereby declare as follows:

1. We understand it is our responsibility to construct and maintain pollution prevention measures, including those for erosion and sediment control, as necessary to prevent any pollutant at any level from being conveyed off the construction site and that these measures must continue to be maintained until the required post-construction pollution prevention measures are in place and completely functional, including permanent landscaping.

2. We understand that site development and storm characteristics will evolve over the course of construction and that it is our responsibility to not only implement storm water pollution prevention measures, but to make adjustments and expansion in the implementation as necessary to adapt to our construction operations and schedule and to address evolving site conditions and actual weather conditions.

3. We understand it is our responsibility to train employees and subcontractors regarding these requirements and to maintain records of the installation, modification, inspection, and maintenance of storm water pollution prevention measures including, but not limited to: training, inspection, maintenance logs; record drawings showing locations, limits, and dates of installation for various measures; dated photographs and field sketches.

4. We are familiar with and agree to implement best management practice storm water pollution prevention measures including installation, routine inspection and maintenance, adjustments and expansion due to evolving site conditions, emergency maintenance and adjustments due to actual storm and site conditions, and documentation.

_____	_____
CONTRACTOR (FIRM)	LICENSE NO.
_____	_____
(AUTHORIZED SIGNATURE)	DATE

B. Contractor shall execute this Declaration and provide to District's Project Manager, with copies to Architect and Engineer, prior to start of construction.

END OF SECTION

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SECTION 32 1216 - ASPHALT CONCRETE PAVING

PART 1 - GENERAL

1.01 SUMMARY

A. Includes materials, equipment, transportation and labor as required for construction of asphalt concrete pavement including, but not limited to: subgrade preparation; aggregate base course; asphalt surfacing; seal coat.

1.02 RELATED DOCUMENTS

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

1.03 RELATED WORK SPECIFIED ELSEWHERE

A. Section 312500: Construction Storm Water Pollution Prevention

C. Section 321723: Painted Pavement Markings

1.04 REFERENCE SPECIFICATIONS / REFERENCE DETAILS

A. Construction materials and methods shall be in accordance with the *Standard Specifications and Standard Plans of the State of California Department of Transportation, 2010 editions* (CalTrans Standards). Where Metric Units of measure are used in the referenced Standards, the equivalent English Units shall be used. (Reference Specifications / Reference Details).

B. Construction materials and methods shall be in accordance with the *Standard Specifications for Public Works Construction*, 2021 edition (SSPWC), published by Building News, Inc., except as modified or otherwise specified herein (hereinafter the Standard Specifications).

C. In case of conflict between Reference Specifications / Details and these Project Specifications / Details, the more stringent provision shall govern, as determined by the Owner's Representative and Engineer.

1.05 GENERAL REQUIREMENTS

A. R-VALUE TESTING

1. When the thicknesses of asphalt concrete surfacing and aggregate base courses given on the Detail Drawings are estimated, the actual thicknesses shall be determined as follows:

a. When the areas to be paved have been brought to rough subgrade elevation pursuant to requirements of Paragraph 3.02 of this Section, the Construction-Phase Geotechnical Engineer shall sample and test the subgrade soil for R-Value determination.

b. Based on the results of R-Value testing, the Construction-Phase Geotechnical Engineer will calculate the actual thicknesses of asphalt concrete surfacing and aggregate base courses required for the Traffic Indexes called for on the Detail Drawings.

B. All work involving excavation including that for water, sewer, storm drain and utility conduits shall be completed and reviewed and approved by the Owner's Representative and the structural backfill reviewed and tested for compaction and approved by the Construction-Phase Geotech before paving and other permanent surface construction may commence.

C. Compaction of fill, subgrade and base courses as well as trench bedding and backfill shall be tested for compliance with applicable requirements by the Construction-Phase Geotechnical Engineer.

D. All existing and proposed valve and utility box covers, manhole and cleanout frames and covers, and catch basin frames and grates shall be carefully adjusted to finish grade in paved areas.

E. Contractor shall provide vehicular and pedestrian traffic control including installing and maintaining fencing, signs, flagmen, lights, and barricades, as required.

F. Contractor shall employ a Licensed Surveyor to provide line and grade control stakes for construction of subgrade, base and paving courses.

1.06 SUBMITTALS

A. Provide submittals according to the Conditions of the Contract and Division 1 “Submittal Procedures” section.

B. Refer to “Submittal Requirements and Schedule” at the end of this Section.

1.07 RECORD DOCUMENTS

A. Comply with requirements of Division 1, “Project Record Documents” section.

PART 2 - MATERIALS

2.01 HEADERS

A. Wood for headers shall be redwood.

2.02 AGGREGATE BASE

A. Aggregate base material shall be Crushed Aggregate Base conforming to Section 200-2.2 of the Standard Specifications (SSPWC).

2.03 ASPHALT CONCRETE

A. Asphalt concrete shall be the product of mixing mineral aggregate and a maximum of 15 percent reclaimed asphalt pavement (RAP) with paving asphalt, in conformance with Section 203-6 of the Standard Specifications (SSPWC).

B. Paving Asphalt shall be performance grade PG 64-10, in conformance with Section 203-1 of the Standard Specifications (SSPWC).

C. Asphalt concrete designated by class and grade for various applications shall be as follows:

1.	Finish Course, Traffic:	C2-PG 64-10-RAP
2.	Base Course, Traffic: (If more than 1 layer)	B-PG 64-10-RAP
3.	Overlay, Traffic:	C2- PG 64-10-RAP
4.	Finish Course, Non-Traffic:	D2- PG 64-10-RAP
5.	Leveling Course and Skin Patching:	D2- PG 64-10-RAP

2.04 TACK COAT

A. Paint binder shall be ss-1h emulsified asphalt conforming to Section 203-3 of the SSPWC.

2.05 SEALCOAT – ASPHALT BASED

A. Materials shall conform to Section 203-9 of the SSPWC.

2.06 The composition of all cutback and emulsified asphalt used in the manufacture, placement or maintenance of asphalt concrete pavement shall conform with the County of Ventura Air Pollution Control District. Contractor shall maintain records available for inspection for a period of 2 years which document the types and amounts of asphalts used.

2.07 Paint for pavement striping and marking shall conform to Section 321723 hereof.

2.08 Reflective glass beads are required for striping and marking in roadways but not for those in parking lots.

2.09 Posts for mounting signs shall be 2" standard weight (3.65 pounds per foot) galvanized steel pipe, supplied with galvanized threaded cap.

2.10 Pre-cast concrete wheelstops shall be 4'-long, anchored with two 18"-long #4 rebars.

PART 3 - EXECUTION

3.01 PROTECTING EXISTING PAVEMENT AT SAWCUT

A. After marking location of proposed sawcut on existing A.C. pavement surface but before cutting, document condition of pavement along sawcut line; provide photographic record to Owner's Representative, with any existing damage highlighted.

B. Protect integrity of sawcut line and existing pavement to remain behind sawcut line until construction of conforming improvements.

C. If existing pavement is broken-off or otherwise damaged along or behind sawcut line before new pavement is placed, sawcut a new conform line parallel with, full length of, and sufficient distance behind original sawcut line so as to remove damaged pavement and / or irregularity along conform line and replace with new pavement section, at no additional cost to Owner.

D. Overcutting is not allowed in sawcutting of existing asphalt concrete pavement and appurtenant concrete improvements; the saw shall be stopped short of an overcut and the remainder of the cut constructed by drilling, to make a smooth, clean corner.

3.02 GRADING PROCEDURE UNDER PAVEMENT AREAS

A. These grading procedures apply to all areas within, and extending a minimum of 1 foot outside of, the limits of asphalt or concrete pavement and the limits of curb, gutter, and sidewalk contiguous with the pavement.

B. Excavate existing soil to a depth which removes all existing non-complying fill and disturbed natural soils, as determined by the Construction-Phase Geotechnical Engineer, or to the bottom of the proposed base course, whichever is deeper.

C. Before proceeding with scarification and recompaction of soil below subgrade level, request observation and testing of surfaces exposed per Paragraph 3.02B hereinabove by Construction Phase Geotechnical Engineer who will determine:

1. Whether or not scarification and recompaction should be performed. Scarification of soil to 9" below subgrade elevation and recompaction to minimum 95% of maximum density is required unless otherwise recommended in writing during construction by the Geotechnical Engineer.

2. Whether or not stabilization of subgrade soils pursuant to Paragraph 3.02H hereinbelow is necessary. If yielding subgrade warranting stabilization is observed, corrective measures will be recommended by Geotechnical Engineer and direction for proceeding given by District as extra work pursuant to provisions of the Contract Documents.

D. For fill required to achieve subgrade elevations, use on-site soil or imported soil meeting the requirements of the Geotechnical Engineer for fill material. Condition, place, and compact this material to minimum 90% of maximum density to a level at least 9 inches below aggregate base material in pavement areas. Compact remaining fill to bottom of aggregate base material or sand course to minimum 95% of maximum density.

E. Moisten or dry scarified soil and fill material to near the optimum moisture content before compacting.

F. For those areas where specific thicknesses of surfacing and base courses are given on the Detail Drawings, finish grading to required subgrade elevations.

G. For those areas where estimated thicknesses of surfacing and base courses are given on the Detail Drawings, bring the areas to rough subgrade elevations based on the estimated thicknesses; request determination by the Construction-Phase Geotechnical Engineer of actual thickness of pavement surfacing and base courses based on the results of R-Value tests to be conducted on the rough subgrade material and the Traffic Index(es) shown on the Detail Drawings; perform additional grading if necessary to adjust subgrade elevations to accommodate the final pavement structural section thickness.

H. Proof-roll finish subgrade with heavy, rubber-tired construction equipment under the observation of the Construction-Phase Geotechnical Engineer; surface shall be firm and unyielding. Address yielding or overwet / pumping subgrade areas as recommended by the Construction-Phase Geotechnical Engineer.

I. Request observation and testing of finish subgrade condition by Construction-Phase Geotechnical Engineer and do not proceed with paving operations until subgrade condition has been approved.

3.03 GRADING TOLERANCES

A. Do all rough and finish grading as necessary to bring the site to the lines and grades called for on the Drawings and within the following tolerances:

1. Finish surface of the subgrade soil beneath base course shall not vary more than ½ inch (0.04 foot) from the design elevation, slope and cross section, established

with due allowance for thicknesses of base course and surfacing. Variations within the specified tolerance shall be compensating such that the average elevation, slope, and cross section conform to those specified per plan.

2. Finish surface of the base course for pavements and for walks, ramps, gutters, driveway aprons, and other pavement-related structures shall not vary more than ½ inch (0.04 foot) from the design elevation, slope and cross section, established with due allowance for thickness of surfacing. Variations within the specified tolerance shall be compensating such that the average elevation, slope, and cross section conform to those specified per plan.

3.04 WOOD HEADERS

A. Construct wood header to form all pavement edges not contained by concrete.

3.05 AGGREGATE BASE

A. Place aggregate base material and compact to minimum 95% of maximum density.

B. Confirm that finish base course has been constructed to the design elevation, slope, and cross section within tolerances specified in Subsection 3.03 hereof. Reconstruct and reconfirm as necessary for conformance before proceeding with placement of surfacing.

3.06 TACK COAT

A. Apply a paint binder of asphaltic emulsion at the rate of 0.15 gallons per square yard of surface to existing vertical surfaces against which paving will be placed and between pavement courses constructed more than 24 hours apart.

3.07 SURFACING

A. Construct asphalt concrete surfacing in conformance with Section 302-5 of the *SSPWC*.

B. If total asphalt concrete thickness is greater than 4 inches (0.33 foot), spread and compact it in two (2) equally-thick layers with the top layer (finish course) not less than 2 inches (0.17 foot) in compacted thickness.

C. Construct the asphalt concrete true to grade and cross section. Upon completion, the surface shall be free of any unevenness greater than ¼ inch (0.02 foot) when checked with a 10-foot long straightedge placed on the surface of the pavement.

3.08 ADJUSTING STRUCTURES

A. Carefully adjust the perimeter edge of valve and utility box covers, manhole and cleanout frames and covers, and catch basin frames and grates to conform with finish pavement surface.

3.09 FLOOD TEST

A. After construction of A.C. pavement and appurtenant concrete features but before seal coating and painting striping and markings, conduct a flood test to review surface drainage, as follows:

1. Supply and discharge water in sufficient quantity to completely wet and cover all A.C. pavement and concrete gutter areas and allow to drain/dry for one hour at 70° F or warmer. Mark the outline limits of residual standing water deep enough to cover a 5 cent piece.

2. Remove and replace A.C. pavement and concrete gutter improvements at no additional cost to the Owner, as necessary to provide positive surface drainage and to prevent ponding of water on pavement surfaces and in gutters. Substitution of asphalt concrete skin patch in lieu of removal and replacement of pavement shall be at the sole discretion of the Owner.

3. Conduct additional flood testing to confirm success of corrective measures.

3.10 REMOVING EXISTING PAVEMENT MARKINGS

A. Remove existing striping and pavement and curb markings which conflict with new work shown on the plans by water blasting or by sand blasting, at contractor's option; however, if water blasting is used and does not completely remove existing striping and markings as determined by the Owner's Representative, follow-up use of sand blasting is required. All A.C. pavement areas subjected to blasting (water or sand) shall be seal coated.

3.11 SEALCOAT

A. Construct Sealcoat at the rate of 0.45 gallons per square yard of surface on all new and existing pavement within work site in accordance with Section 302-8 of the *SSPWC*.

B. A tack coat conforming to Section 302-8.2.1 shall be applied to existing pavement surfaces in advance of sealcoat.

C. Sealcoat shall not be applied to new asphalt pavement until the pavement has cured for 7 days.

3.12 PAVEMENT MARKING

A. See Section 321723.

3.13 SIGNAGE

A. Provide and install signs in accordance with the Drawings and Detail Drawings.

3.13 WHEELSTOPS

A. Install pre-cast concrete wheelstops anchored with two 18"-long #4 rebars.

Section continues on next page.

3.14 SUBMITTAL REQUIREMENTS AND SCHEDULE

A. Include this form with submittals of this Specification Section, unless a substitute product is being proposed, in which case refer to Division 1, "Substitutions" section, for substitution requests.

Contractor's Initials:____ [Contractor is to acknowledge with initials each submittal included]

____ Letter of explanation attached for each submittal not included.

____ All submitted products are as specified.

B. SUBMITTAL SCHEDULE

____ 1. Submit mix design for Asphalt Concrete.

____ 2. Submit laboratory test results for Crushed Aggregate Base.

____ 3. Submit mix design for Sealcoat.

END OF SECTION 321216

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SECTION 32 1313 - SITE CONCRETE

PART 1 - GENERAL

1.01 DESCRIPTION

A. Provide materials, equipment and transportation and perform labor as required for construction of Portland cement concrete improvements including, but not limited to: subgrade preparation; aggregate or sand base course; concrete pavement, curbs, gutters, walkways, ramps, drainage structures, post footings.

B. This work does not include concrete associated with the buildings or retaining walls.

1.02 RELATED DOCUMENTS

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

1.03 WORK INCLUDED

A. Form work, shoring, bracing and anchorage

B. Concrete reinforcement and accessories

C. Cast-in-place concrete

1.04 RELATED WORK SPECIFIED ELSEWHERE

A. Section 015100: Field Engineering

B. Section 015723: Temporary Storm Water Pollution Control

C. Section 312000: Site Grading

D. Section 321313.10: Site Concrete Reinforcement

E. Section 334100: Storm Drainage

1.05 REGULATORY REQUIREMENTS

A. Construction shall comply with the *California Code of Regulations, Title 24, Part 2* (the *California Building Code*), most recent effective edition.

1.06 REFERENCE SPECIFICATIONS

A. ASTM C33 – Concrete Aggregates

B. ASTM C94 – Ready Mixed Concrete

C. ASTM C150 – Portland Cement

D. ASTM A615 – Deformed and Plain Billet-steel for Concrete Reinforcement

E. ASTM C309 – Liquid Membrane-forming Compounds for Curing Concrete

F. *California Building Code,* Chapter 19, Concrete

G. *Standard Specifications for Public Works Construction, 2021 edition (SSPWC)*, published by Building News, Inc.

1.07 GENERAL REQUIREMENTS

A. R-VALUE TESTING

1. When the thicknesses of concrete surfacing and aggregate base courses for vehicular traffic areas given on the Detail Drawings are estimated, the actual thicknesses shall be determined as follows:

a. When the areas to be paved with concrete have been brought to rough subgrade elevation pursuant to requirements of Section 312000 hereof, the Construction-Phase Geotechnical Engineer shall sample and test the subgrade soil for R-Value determination.

b. Based on the results of R-Value testing, the Construction-Phase Geotechnical Engineer will calculate the actual thicknesses of concrete surfacing and aggregate base courses required for the Traffic Index(es) called for on the Detail Drawings.

B. All work involving excavation including that for water, sewer, storm drain and utility conduits shall be completed and reviewed and approved by the Owner's Representative and the structural backfill reviewed and tested for compaction and approved by the Construction Phase Geotechnical Engineer before paving and other permanent surface construction may commence.

C. Compaction of fill, subgrade and base courses as well as trench bedding and backfill shall be tested for compliance with applicable requirements by the Construction-Phase Geotechnical Engineer. Compaction tests shall be in accordance with ASTM Standard D-1557-91.

D. All existing and proposed valve and utility box covers, manhole and cleanout frames and covers, and catch basin frames and grates shall be carefully adjusted to finish grade in paved areas.

E. Contractor shall provide vehicular and pedestrian traffic control including installing and maintaining fencing, signs, flagmen, lights, and barricades, as required.

F. Contractor shall employ a Licensed Surveyor to provide line and grade control stakes for construction of subgrade, base, and paving and for construction of curb and gutter, walks, and drainage structures.

1.08 SUBMITTALS

A. Provide submittals according to the Conditions of the Contract and Division 1 “Submittal Procedures” section.

B. Refer to “Submittal Requirements and Schedule” at the end of this Section.

1.09 RECORD DOCUMENTS

A. Comply with requirements of Division 1, “Project Record Documents” section, and following:

1. Accurately record changes in construction from that called for on the Drawings and Specifications, including unexpected physical conditions and unmarked or inaccurately marked existing pipelines, conduits and structures, for Record Documents.

1.10 QUALITY ASSURANCE

A. Specified cement and specified aggregates shall be supplied from single sources only.

1.11 TESTS

A. Testing and analysis of concrete will be performed under provisions of Division 1, “Testing and Inspection” section.

1.12 REQUIRED SACRIFICIAL CONCRETE MOCK-UP

A. Prior to scheduling first concrete pour for permanent improvements, construct a trial concrete slab with monolithic curb to demonstrate jointing and finishing techniques for approval or comment by Owner.

B. Sacrificial slab shall be minimum 10’-long, 5’-wide, 4”-thick un-reinforced concrete with monolithic 6”-high and wide curb; concrete shall be per approved mix design.

C. Construct one transverse control joint and one transverse expansion joint continuous through slab and curb.

D. Construct chamfered and / or radiused edge treatments as applicable to the work.

E. Construct medium broom finish across ½ of slab and heavy broom finish across ½ of slab.

F. Review with Owner and Architect / Engineer; construct improvements throughout project in accordance with approved mock-up and revisions requested by Owner.

G. Maintain mock-up for comparison throughout the construction period; remove and dispose of off-site after completion of concrete improvements.

H. Refer to Paragraph 3.10 for colored concrete mockup requirements.

PART 2 - MATERIALS

2.01 BASE MATERIAL

A. Sand base material shall be imported clean sand of such gradation that 90% to 100% passes through a No. 4 sieve, less than 5% passes through a No. 200 sieve, and the Sand Equivalent value is greater than or equal to 40. For processed sand, a maximum of 15% shall pass through a No. 200 sieve.

B. Aggregate base material shall be Crushed Aggregate Base conforming to Section 200-2.2 of the Standard Specifications (SSPWC).

2.02 FORM MATERIALS

A. GENERAL: Shall conform to California Building Code, Section 1906, Formwork, Embedded Pipes and Construction Joints.

B. PLYWOOD FORMS: Douglas Fir species; solid-one-side, sound undamaged sheets. Unless otherwise called for on plans, surface of form side against concrete shall provide a medium density texture.

C. LUMBER: Douglas Fir species; construction grade with grade stamp clearly visible.

D. STEEL FORMS: Minimum 16 gage thick, stiffened to support weight of concrete with minimum deflection.

E. FORM TIES: Removable metal of adjustable length, cone ends.

2.03 REINFORCING STEEL

A. All reinforcing shall be fabricated from steel manufactured in the United States.

B. Reinforcing steel shall be deformed billet-steel for concrete reinforcement conforming to ASTM A-615, Grade 60 for bar sizes No. 4 and larger, Grade 40 for bar size No. 3, Grade 60 acceptable for all sizes.

C. Welded bars shall conform to the most recent issue of ASTM Standard A-706, Grade 60 for all bar sizes.

2.04 CONCRETE MATERIALS

A. CEMENT: Shall be Type II, low alkali (no higher than 0.4%), conforming to ASTM C-150.

B. AGGREGATES (COARSE AND FINE): All aggregate used in concrete shall conform to ASTM C-33. Aggregate shall be uniformly graded, with the maximum aggregate size being ¾" to 1", and the ratio of coarse aggregate to fine aggregate being approximately 60% to 40% (by weight), respectively.

C. Coarse and fine aggregate (sand) are to come from a source proven to have non-reactive characteristics. Coarse aggregate which is heavy media processed (Saticoy, Sisquoc), Santa Margarita rock, or San Gabriel rock will be considered as meeting the criteria of non-reactivity. Moorpark sand (Quality, Best, Blue Star) will be considered as meeting the requirements of non-reactivity. Other aggregates meeting or exceeding the aggregate reactivity characteristics of the aggregates listed above are acceptable upon submittal of adequate documentation (ASTM C-289 and ASTM C-277 test results that are not more than 2 years old).

D. WATER: shall be clean, suitable for human consumption, and not detrimental to concrete.

2.05 CURING COMPOUND

A. Shall be water-base liquid membrane-forming compound conforming to ASTM C309, 1100 Clear Series manufactured by W.R. Meadows, Inc., Hampshire, Illinois, or equivalent, for use on exterior flatwork only.

B. Liquid membrane-forming compound shall be applied at the rate of 1 gallon per 200 square feet, in 2 coats, the second coat applied at right angles to the first.

2.06 BONDING AGENT

A. Shall be polyvinyl acetate HIBOND manufactured by Lambert Corporation, Orlando, FL, LOCK BOND NO. 906 manufactured by MacklanBurg-Duncan Co., City of Industry, CA, or equivalent.

2.07 CONCRETE MIX

A. Mix and deliver concrete in accordance with *California Building Code*, Section 1905A.

B. Have mix designed and certified by a registered civil engineer, licensed in California.

C. Select proportions for concrete in accordance with the approved design mix.

D. Provide concrete conforming to the following criteria:

Element	Strength Min. 28-day	Weight	Min. Cement Content	Max. Agg. Size	Max Slump	Wat/Cem Ratio	Admixtures
Curbs, gutters, ramps, walks & flatwork	3,000 psi	150 pcf	5.5 sacks/C.Y.	3/4-inch	4 inches	0.55	See p. E
Drainage & stair structures; pavement	4,000 psi	150 pcf	6.5 sacks/C.Y.	1-inch	4 inches	0.50	See p. E

E. Include the following admixtures:

1. 1.5% air entrainment
2. 15% fly ash, Type N or F only
3. Low range water reducer

F. The use of a pea gravel mix (3/8" aggregate) concrete is expressly prohibited.

2.08 EXPANSION JOINT

A. Filler material shall be preformed bituminous type conforming to ASTM Standard D-1751.

B. Dowel tubing shall be plastic SPEED DOWEL supplied with sacrificial plate for attaching to form, as supplied by Aztec Concrete Accessories, or approved equivalent.

2.09 REMOVABLE JOINT CAP

A. High impact polystyrene, depth equal to width of expansion joint filler, supplied in 10-foot lengths, as manufactured by Concrete Tie, or equivalent.

B. Where polyurethane sealant primers are used, a bondbreaker tape shall be applied prior to caulking.

2.10 JOINT SEALANT

A. For crack-control and expansion joints shall be chemical-cure, two-component, polyurethane-base, non-sag elastomeric Sikaflex-2cNS manufactured by Sika Corporation, Lyndhurst, NJ, or approved equivalent. Color: Limestone Grey.

2.11 ABRASIVE STAIR NOSING

A. PRODUCT: Type 231BF (3 inch wide) by Wooster or approved equivalent by Balco or American Safety Tread.

B. COLOR: Safety Yellow for Drop-Off / Loading Isle Curb, Black for Exterior Stairs and Steps, or as required by Architect; confirm in advance. Color used must provide 70% contrast from color of curb or stair tread surface.

C. LENGTH: Length of stair tread or of Drop-off / Loading Isle curb, less 3 inches on each end.

2.12 NON-SLIP PAINT

A. PRODUCT: For visually impaired warning strips shall be EPOTUFF ES-83 Epoxy as manufactured by No Skidding Products, Inc. [(416) 667-1783], or approved equivalent.

B. COLOR: Safety Yellow for Drop-Off / Loading Isle Curb (special order), Black for Exterior Stairs and Steps, or as required by Architect; confirm in advance. Color used must provide 70% contrast from color of curb or stair tread surface.

2.13 EPOXY, FLATWORK DOWELS

A. Epoxy used for grouting rebar dowels to maintain joint integrity between site flatwork components (curbs, gutters, walkways, ramps) shall be Simpson SET-XP Adhesive, ICC No. ESR-2508, or equivalent. Pull tests are not required.

2.14 WATERPROOFING

A. Shall be MERLEX SUPER BLOCKADE cement-based coating as supplied by Concrete Tie Co., Ventura, CA, or approved equivalent, applied in two coats.

B. Color of first coat: white; color of second coat: gray.

2.15 SKATEBOARD DETERRENT DEVICES

A. Grinder Minders as manufactured by Grind To A Halt, Inc., or equivalent, with brushed stainless steel finish.

B. Install in strict accordance with manufacturer’s specified procedures.

C. Install skate stop devices on raised curbs and walls contiguous with or adjacent to paved walking and driving surfaces, unless waived in writing by the Districts. Skate stop devices shall not be installed where top of curb or wall is part of a walking surface and could result in a trip hazard (such as pavement edge curb flush with contiguous sidewalk).

D. On ramps, install skate stop devices on edge curbs and walls centered between each pair of handrail posts, not to exceed 4’ spacing, continuous the full length of the ramp. Adjust spacing as necessary to clear edge of expansion, construction, or crack control joint by 3 inches.

E. On curbs and walls not containing rail posts, install skate stop devices located 18” from end of, or angle point in, curb / wall and at 36” maximum spacing continuous along full length of curb / walls.

F. Provide Shop Drawing detailing proposed locations of all skate stop devices for review and approval in advance of installation.

2.16 DETECTABLE WARNING PAVERS

A. MANUFACTURER: Wausau Tile, or equivalent.

B. PRODUCT: Precast Concrete Truncated Dome ADA Compliant Warning Paver.

C. COLOR: Terra Cotta.

D. APPLICATION: Subject to vehicular traffic loading.

E. INSTALLATION: In accordance with manufacturer's recommendations.

PART 3 – EXECUTION

3.01 PROTECTING EXISTING CONCRETE AT SAWCUT

A. After marking location of proposed sawcut on existing concrete improvement surface but before cutting, document condition of concrete along sawcut line; provide photographic record to Owner's Representative, with any existing damage highlighted.

B. Protect integrity of sawcut line and existing concrete improvements to remain behind sawcut line until construction of conforming improvements.

C. If existing concrete is broken-off or otherwise damaged along or behind sawcut line before new concrete is placed, sawcut a new conform line parallel with, full length of, and sufficient distance behind original sawcut line so as to remove damaged concrete and / or irregularity along conform line and replace, at no additional cost to Owner.

D. Overcutting is not allowed in sawcutting of existing concrete pavement and flatwork; the saw shall be stopped short of an overcut and the remainder of the cut constructed by drilling, to make a smooth, clean corner.

3.02 GRADING PROCEDURE UNDER SITE CONCRETE IMPROVEMENT AREAS

A. These grading procedures apply to all areas within, and extending a minimum of 1 foot outside of, the limits of asphalt or concrete pavement and the limits of curb, gutter, sidewalk, ramps and stairs.

B. Excavate existing soil to a depth which removes all existing non-complying fill and disturbed natural soils, as determined by the Construction-Phase Geotechnical Engineer, or to the bottom of the proposed base course, whichever is deeper.

C. Before proceeding with scarification and recompaction of soil below subgrade level, request observation and testing of surfaces exposed per Paragraph 3.02B hereinabove by Construction Phase Geotechnical Engineer who will determine:

1. Whether or not scarification and recompaction should be performed. Scarification of soil to 9" below subgrade elevation and recompaction to minimum 95% of maximum density is required unless otherwise recommended in writing during construction by the Geotechnical Engineer.

2. Whether or not stabilization of subgrade soils pursuant to Paragraph 3.02H hereinbelow is necessary. If yielding subgrade warranting stabilization is observed, corrective measures will be recommended by Geotechnical Engineer and direction for proceeding given by District as extra work pursuant to provisions of the Contract Documents.

D. For fill required to achieve subgrade elevations, use on-site soil or imported soil meeting the requirements of the Geotechnical Engineer for fill material. Condition, place, and compact this material to minimum 90% of maximum density to a level at least 9 inches below sand or aggregate base material. Compact remaining fill to bottom of sand or aggregate base material to minimum 95% of maximum density.

E. Moisten or dry scarified soil and fill material to near the optimum moisture content before compacting.

F. For those areas where specific thicknesses of surfacing and base courses are given on the Detail Drawings, finish grading to required subgrade elevations.

G. For those areas where estimated thicknesses of surfacing and base courses are given on the Detail Drawings, bring the areas to rough subgrade elevations based on the estimated thicknesses; request determination by the Construction-Phase Geotechnical Engineer of actual thickness of pavement surfacing and base courses based on the results of R-Value tests to be conducted on the rough subgrade material and the Traffic Index(es) shown on the Detail Drawings; perform additional grading if necessary to adjust subgrade elevations to accommodate the final pavement structural section thickness.

H. Proof-roll finish subgrade with heavy, rubber-tired construction equipment under the observation of the Construction-Phase Geotechnical Engineer; surface shall be firm and unyielding. Address yielding or overwet / pumping subgrade areas as recommended by the Construction-Phase Geotechnical Engineer.

I. Request observation and testing of finish subgrade condition by Construction-Phase Geotechnical Engineer and do not proceed with paving operations until subgrade condition has been approved.

3.03 FORMWORK

A. Verify lines, grades and dimensions and bring all discrepancies to the attention of the Architect / Engineer for resolution before proceeding with formwork.

B. Where it will not be exposed to view, foundation concrete may be placed directly into neat excavations (earth forms) provided the foundation trench walls are firm and stable, as determined by the engineer and the geotechnical engineer, and such placement is approved by the Division of the State Architect and the Owner's Representative.

C. Where earth forms are allowed to be used, cut excavations neatly and accurately to size for placement of concrete directly against the excavation and, except for bottom of footings, trim the excavation to allow for one inch of additional concrete beyond the dimensions or profiles shown on the Drawings. Hand trim sides and bottom of excavation, remove debris and loose soil, and construct formwork along each side of excavation at top to secure reinforcing and prevent sloughing; the minimum form work shown on the Drawings is mandatory to insure a clean excavation immediately prior to and during placement of concrete.

D. Request observation and testing of Finish Subgrade condition by Construction Phase Geotechnical Engineer and do not proceed with placement of base material, form work, or reinforcing until subgrade condition has been approved.

E. For concrete pavement, confirm that finish base course has been constructed to the design elevation, slope, and cross section within tolerances specified in Section 312000, Subsection 3.03B, pursuant to Section 015100 Field Engineering. Reconstruct and reconfirm as necessary for conformance before proceeding with placement of surfacing.

F. Where called for, place base material and compact to minimum 95% density of maximum density. Request observation and testing and do not proceed with form work or reinforcing until thickness and compaction density of base material have been approved.

G. Erect formwork, shoring and bracing to achieve design requirements, in accordance with Section 1906A, *California Building Code*.

1. Remove old concrete which is set and dry from form boards.

2. Provide bracing to ensure stability of formwork and shore or strengthen formwork subject to overstressing by construction loads.

3. Arrange and assemble formwork, bracing, and shoring to permit dismantling and stripping without damage to concrete.

4. Minimize the number of form joints; align joints and make watertight.

5. Provide chamfer strips on external corners where called for on Detail Drawings.

6. Layout joint spacing and mark on forms and request review by Owner's Representative.

H. Protect staff, personnel and public from harm and accident during formwork. Conform to California Code of Regulations, Title 8, Subchapter 4, Construction Safety Orders.

3.04 POUR STOPS

A. Construct separate concrete pours at all expansion joints and elsewhere as called for on the plans (pour stops). At least 48 hours shall separate concrete placement on each side of pour stop.

B. At expansion joints serving as pour stops, edge of first pour shall be formed and speed dowel tubes installed. Expansion joint filler with removable joint cap shall serve as form for grade control and for tooling edge of second pour.

3.05 REINFORCEMENT

A. Fabricate steel reinforcement in accordance with the Detail Drawings and Specifications. Where not detailed or specified, comply with the applicable requirements of Section 1907A of the *California Building Code* and the American Concrete Institute SP-66-88.

B. Bend, cut, and place bars accurately. Bend bars cold at the mill; heating or field-bending of bars is not permitted. Do not bend or straighten bars in any manner that will damage the material.

C. Place, support and secure reinforcement against displacement during pouring and consolidating concrete.

D. Unless otherwise noted on Drawings, coverage for reinforcing bars (to face of bar) shall be as follows:

1. Concrete in contact with earth, unformed: 3”
2. Concrete in contact with earth, formed: 2”
3. Wall, exterior face, #5 bar and smaller: 1 ½”
4. Wall, exterior face, #6 bar and larger: 2”
5. Structural slab: ¾”

3.06 PLACING CONCRETE

A. Construct concrete improvements in accordance with the Drawings, Detail Drawings, and Specifications.

B. Prior to scheduling concrete pour:

1. Have excavation, form work and reinforcement reviewed and accepted by Owner’s Representative.

2. Have joint layout, as marked on forms in advance, reviewed and accepted by Owner's Representative.

3. Where required gutter gradient is less than 1.0% (1/8 inch per foot), have a Licensed Surveyor confirm form elevations prior to ordering concrete.

4. If there has been rainfall or other discharge of water to excavations after observation and testing pursuant to Paragraph 3.02F hereof, have subgrade re-reviewed and approved by Construction Phase Geotechnical Engineer.

C. Notify Architect, Engineer, Structural Engineer, and Geotechnical Engineer / Testing Laboratory minimum 24 hours prior to commencement of concrete placement.

D. PRIOR TO PLACING CONCRETE:

1. Carefully review excavation, form work, and reinforcement. Remove wood chips, debris, and loose soil; take out temporary bracing and cleats, box openings for pipes; secure forms, reinforcement, anchors, and embedded items in their proper places.

2. Dampen forms and sides and base of excavation against which concrete will be placed by spraying with clean water; apply water sufficient to dampen forms / excavation while not causing erosion or standing water.

3. Before placing new concrete against hardened concrete and before placing masonry on concrete, remove all incrustations and laitance from forms, reinforcing, and surface of hardened concrete. If the surface mortar and laitance of the first concrete pour has not been completely removed by water blasting, sandblast the hardened concrete surface to expose the coarse aggregate to ¼ inch amplitude. Surfaces which are to receive drypack shall also be prepared as herein specified.

E. HANDLING AND PLACING:

1. Once concrete placement has started, carry on as a continuous operation until the section of approved size and shape is completed.

2. Handle concrete as rapidly as practicable from the mixer to the place of final deposit by methods which prevent the separation or loss of ingredients. Deposit concrete as neatly as practicable, in its final position to avoid rehandling or flowing.

3. Concrete shall not be dropped freely where reinforcing will cause segregation, nor shall it be dropped freely more than 4 feet.

4. Maintain plastic surface approximately horizontal.

5. Do not deposit concrete that has partially hardened in the work. Do not retemper or use concrete after having stood 15 minutes after leaving the truck or mixer.

6. The total elapsed time between addition of water at the batch plant and complete discharge of the concrete load at the site shall not exceed 90 minutes.

7. Thoroughly vibrate all concrete within 15 minutes after placement.

F. VIBRATING AND COMPACTING:

1. Thoroughly consolidate concrete and compact by suitable means during the operation of placing and depositing. Thoroughly work concrete around reinforcement, embedded items, and into the corners of the forms. Thoroughly vibrate concrete adjacent to forms. Use internal vibrators under experienced supervision and keep out of contact with reinforcement and wood forms.

2. Vibrate close to the forms but do not continue at one spot to the extent that large areas of grout are formed or the heavier aggregates are caused to settle. Take care not to disturb concrete which has taken its initial set.

3.07 PROTECTION AND CURING

A. GENERAL: Protect freshly deposited concrete from premature drying and excessively hot or cold temperatures, and maintain without drying at a relatively constant temperature for the period of time necessary for the hydration of the cement and proper hardening of the concrete.

B. INITIAL CURING: Initial curing shall immediately follow the finishing operation. Keep concrete continuously moist at least overnight. Use one of the following materials or methods:

1. Ponding or continuous sprinkling.

2. Use of curing compounds: Apply compounds in accordance with the manufacturer's recommendations. Do not use on surfaces against which additional concrete or other cementitious finishing materials are to be bonded or on surfaces on which such curing is prohibited by these specifications.

C. FINAL CURING: Immediately following the initial curing and before the concrete has dried, accomplish additional curing using one of the following materials or methods:

1. Continuing the method used in initial curing.

2. Waterproof paper covering.

3. Other moisture-retaining coverings as approved.

D. DRILLING AND CORING: Drilling for anchors such as for skate stop devices and coring for post embedment shall not take place sooner than 28 days after placement of concrete.

3.08 WATERPROOFING

A. Prepare the surface as recommended by the manufacturer of the waterproofing material.

B. Apply the waterproofing to the limits identified on the Drawings and Detail Drawings in strict accordance with the manufacturer's recommendations.

C. For brush-applied material, apply in two coats with delay between coats as recommended by the manufacturer; color of first coat shall be white and of second coat shall be gray.

3.09 EXISTING WORK

A. Overcutting is not allowed in sawcutting of existing concrete pavement and flatwork; at changes in direction, stop the saw short of an overcut and drill to make a smooth, clean corner.

B. Where new concrete is dowelled to existing work, drill holes in existing concrete, insert steel dowels and set with epoxy grout.

C. Prepare previously placed concrete by cleaning with steel brush and apply bonding agent in accordance with manufacturer's instructions.

3.10 COLORED WALKWAYS AND FLATWORK [IF CALLED FOR ON PLANS]

A. Conform to Architect's requirements for color, finish, and joint / scoreline pattern.

B. Construct a mockup for approval by Architect for each color required. Mockups shall contain an expansion joint, a control joint, and scorelines and shall be minimum of 10-feet long for walkways and minimum of 20-feet square for flatwork areas.

C. Do not construct permanent colored concrete improvements without approval of mockup by Architect. If approved, mockup may remain as part of permanent work, provided it also conforms to all dimensional, structural, and geotechnical requirements.

3.11 CONCRETE FINISHES

A. FORMED SURFACES: smooth finish.

B. SIDEWALKS, RAMPS, EXTERIOR SLABS, PAVEMENTS: Non-slip surface finish shall be provided at all walk areas using a broom finish transverse to path of travel; medium broom (medium salt) where surface slope is less than 6%, heavy broom (slip resistant) where surface slope is 6% or greater, conforming to CBC Section 11B-302. Finishes shall be uniform throughout project.

C. WATERPROOFING:

1. Where waterproofing is called for on the Drawings, apply it in accordance with the manufacturer's instructions in two coats; apply the second coat at right angles to the first.

2. Mask the interface line along finish grade to prevent application of waterproofing above grade.

3.12 JOINTS: CURB, CURB & GUTTER, GUTTER, WALK, RAMP

A. CRACK CONTROL JOINTS

1. Construct joints during the finishing operation in accordance with the Detail Drawings and these specifications.

2. Construct transverse Crack Control Joints (deep-tooled weakened-plane joints) at regular intervals not exceeding 10-feet, directly above drain pipes which outlet through curb, and at

locations called for on the Drawings or by the Owner's Representative. Longitudinal reinforcement shall be continuous through joint.

3. Construct joints as follows: after preliminary troweling, part the concrete to a depth of 2 inches with a straightedge to create a division in the coarse aggregate. Then refloat the concrete to fill the parted joint with mortar. Mark the form headers to locate the weakened plane for final joint finishing, which shall be accomplished with a jointer tool having a depth of ½ inch and a radius of 1/8 inch. The finished joint opening shall not be wider than 1/8 inch.

B. EXPANSION JOINTS

1. Construct transverse Expansion Joints at BCR, ECR, and at regular intervals not exceeding 40-feet. Construct additional expansion joints along edges of driveways and fixed objects and structures (fire hydrant, light standard, utility pole, drain inlet, manhole or valve cover, screen/retaining wall, building wall, etc.) and at locations called for on the Drawings or by the Owner's Representative. Do not construct Expansion Joints in cross or valley gutter which is separate from curb. Construct joints in accordance with the Detail Drawings and these Specifications.

2. Construct expansion joints ⅜-inch wide with one piece of preformed joint filler installed from bottom of slab to within ⅝-inch of concrete surface; install a ⅜-inch deep removable joint cap on the filler with the top of cap ¼-inch below concrete surface; fill resulting reservoir with joint sealant to within ¼-inch of concrete surface as soon after completion of the curing period as is possible. Joints shall be cleaned of all foreign material, including membrane curing compounds and all of the removable portion of the joint cap, and shall be surface-dry when sealer is installed.

3. Interrupt longitudinal reinforcing bars 3 inches clear of expansion joints and install minimum 16-inch long smooth dowels across, and centered on, the joint. Install one-half (one end) of dowel within a "Speed Dowel" tube; provide a 1-inch gap between the end of the dowel and the sealed end of the tube. For walks, ramps and flatwork, install 5/8” dowels centered vertically in slab and centered horizontally between each pair of longitudinal rebar. For curbs and curb and gutters, install ¾” dowels centered between pairs of longitudinal rebar, horizontal and vertical (1 dowel for curb, 2 dowels for curb and gutter). Omit smooth dowels at BCR and ECR when curb radius is less than 5 feet.

C. Adjust joint spacing as necessary to align with those already constructed in existing adjacent (contiguous) features.

D. Along curves and through walk returns, joints shall be radial.

3.13 JOINTS: CONCRETE PAVEMENT

A. CRACK CONTROL JOINTS

1. Construct joints by sawcutting grooves as soon as concrete has hardened sufficiently to support the saw and the saw will not dislodge the concrete, but before six (6) hours after finishing of the concrete. An early entry saw such as the “Soff-Cut” saw by Soff-Cut International (800) 776-3328 is recommended.

2. Construct transverse and longitudinal Crack Control Joints (Contraction Joints) at regular intervals not exceeding 10-foot maximum spacing each way and at additional locations called for on the Drawings or by the Owner’s Representative. Construct joints in accordance with the Detail Drawings and these Specifications. Width of joints shall be ¼-inch, depth shall be 2 inches.

3. Fill sawcut joints with joint sealant to within ¼" of concrete surface as soon after completion of the curing period as is feasible and before pavement is opened to traffic. Joints shall be cleaned of all foreign material, including membrane curing compound, and shall be surface-dry when sealer is installed.

B. EXPANSION JOINTS

1. Construct Expansion Joints at locations called for on the Drawings or by the Owner’s Representative. Construct joints in accordance with the Detail Drawings and these Specifications.

2. Construct expansion joints ½-inch wide with one piece of preformed joint filler installed from bottom of slab to within 1½" of concrete surface; fill resulting reservoir with backer rod and joint sealant to within ¼" of concrete surface as soon after completion of the curing period as is feasible and before pavement is opened to traffic. Joints shall be cleaned of all foreign material, including membrane curing compound, and shall be surface-dry when sealer is installed.

3. Interrupt reinforcing bars 3 inches clear of expansion joints and install minimum 18-inch long smooth dowels across, and centered on, the joint. Dowel diameter shall be 1 inch for 8 inch thickened slab, 1 ¼ inches for 10 inch thickened slab. Install one-half (one end) of dowel within a "Speed Dowel" tube; provide a 1-inch gap between the end of the dowel and the sealed end of the tube. Install dowels centered vertically in the thickened slab and centered horizontally between each pair of longitudinal rebar.

C. Adjust joint spacing as necessary to align with those already constructed in existing adjacent (contiguous) curb, gutter, and sidewalk.

D. Along curves, joints shall be radial.

3.14 REINFORCING STEEL

A. Install reinforcing steel in concrete improvements in accordance with the Detail Drawings.

B. Install reinforcing steel continuous through construction joints with a minimum 24-inch lap.

C. Interrupt reinforcing steel at expansion joints and construct dowels across joints in accordance with Paragraphs 3.12-B and 3.13-B of this Section and the Detail Drawings.

3.15 ADJUSTING STRUCTURES

A. Carefully adjust the perimeter edge of valve box, utility vault, and manhole frames and covers to conform with finish pavement surface.

3.16 SIGN POSTS

A. Where sign post is to be installed in concrete pavement or walkway, accurately locate post and construct footing per the Detail Drawing monolithically with pavement or walkway. After concrete has cured, core drill and install sign post per the Detail Drawing.

3.17 FIELD QUALITY CONTROL

A. Request inspection by Owner's Representative after forming and placing reinforcing steel and after marking joint / scoreline locations on forms but prior to scheduling the concrete pour. Provide at least 24-hours advance notice.

B. The total elapsed time between addition of water at the batch plant and complete discharge of the concrete load at the site shall not exceed 90 minutes.

Thoroughly vibrate all concrete within 15 minutes after placement.

C. Overcutting is not allowed in sawcutting of existing concrete pavement and flatwork; the saw shall be stopped short of an overcut and the remainder of the cut constructed by drilling, to make a smooth, clean corner.

D. Survey forms for concrete walks and ramps prior to ordering concrete to insure that accessibility requirements for slope and cross-slope will be conformed with.

E. Where design longitudinal gradient is less than 1% (1/8 inch per foot) survey gutter or curb and gutter forms prior to ordering concrete to ensure that design slope is being achieved.

F. ACCEPTABLE TOLERANCES:

1. Formed concrete features shall not vary more than 1/4 inch (0.02 foot) from design dimension (height, width or length) at any location.

2. Formed concrete features shall not vary more than 1/4 inch (0.02 foot) from design line or grade at any location or along any 10’ length.

3. The faces of curbs and walls shall not vary more than 1/4 inch (0.02 foot) above or below the surface plane called for by the Drawings and Detail Drawings.

4. The surface of concrete walks, ramps, and pavements shall be finished true to grade and cross section and shall be free of any unevenness greater than ¼ inch (0.02 foot) when checked with a 10-foot long straight edge placed on the surface.

5. In no case shall water pond in gutters or on concrete walks, pavement and flatwork. Ponded water is defined as that which covers a 5 cent piece after area is flooded and allowed to drain for one hour at 70º F or warmer.

6. In no case shall maximum accessible slopes or cross-slopes be exceeded.

3.18 FLOOD TEST

A. After construction of concrete site improvements including walks, steps, ramps, flatwork, pavement and gutters, conduct a flood test to review surface drainage, as follows:

1. Supply and discharge water in sufficient quantity to completely wet and cover all site concrete surfaces including gutter areas and allow to drain/dry for one hour at 70º F or warmer. Mark the outline limits of residual standing water deep enough to cover a 5 cent piece with non-permanent marking crayon.

2. Remove and replace site concrete improvements at no additional cost to the Owner, as necessary to provide positive surface drainage and to prevent ponding of water on surfaces and in gutters; removal and replacement shall be to the closest joint each way limits of from ponding.

3. Conduct additional flood testing to confirm success of corrective measures.

3.19 DEFECTIVE WORK

A. Defective concrete work shall be removed and replaced at Contractor’s expense.

Section continues on next page.

3.20 SUBMITTAL REQUIREMENTS AND SCHEDULE

A. Include this form with submittals of this Specification Section, unless a substitute product is being proposed, in which case refer to Division 1, "Substitutions" section, for substitution requests.

Contractor's Initials: [Contractor is to acknowledge with initials each submittal included]

____ Letter of explanation attached for each submittal not included.

____ All submitted products are as specified.

B. SUBMITTAL SCHEDULE

1. Product Information

____ a. Submit concrete mix design for each class of concrete required.

b. Submit laboratory test results for all aggregate sources which confirm conformance with Paragraph 2.04 hereof.

____ c. Submit laboratory test results for aggregate base which confirm conformance with grading and quality requirements of Section 200-2.2 of the SSPWC.

____ d. Submit sieve analysis and Sand Equivalent value for sand base.

____ e. Submit mill affidavits stating the grades and physical and chemical properties of the reinforcing steel and conformance with ASTM Specifications.

____ f. Submit manufacturer's product data for joint filler, backer rod, and sealant, for epoxy grout, for waterproofing, for curing compound.

____ g. Submit manufacturer's product data for abrasive stair nosing.

____ h. Submit manufacturer's product data for non-slip paint for warning strips.

i. Submit manufacturer’s product data for skateboard deterrent devices.

j. Submit manufacturer’s product data for precast concrete detectable warning pavers.

2. Shop Drawings

a. Prepare and submit shop drawings, drawn to scale, showing an elevation view of all retaining structures and detailing the locations of structure joints and form joints and snap tie layout.

b. Prepare and submit shop drawings, drawn to scale, detailing locations of skateboard deterrent devices.

END OF SECTION

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SECTION 32 1314 - SITE CONCRETE REINFORCEMENT

PART 1 - GENERAL

1.01 DESCRIPTION

A. Provide materials, equipment and transportation and perform labor as required for supplying reinforcing steel for cast-in-place concrete pavement, curbs, gutters, walkways, ramps, drainage structures, retaining structures, post footings.

B. This work does not include concrete reinforcement associated with the building(s).

1.02 RELATED DOCUMENTS

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

1.03 RELATED WORK SPECIFIED ELSEWHERE

A. Section 321313: Site Concrete

1.04 REFERENCE SPECIFICATIONS

A. ACI SP 66 – *Detailing Manual*

B. ACI 318 – *Building Code Requirements for Reinforced Concrete*

C. ASTM A 82 – *Steel Wire, Plain, for Concrete Reinforcement*

D. ASTM A 615 – *Deformed and Plain Billet-steel for Concrete Reinforcement*

E. CRSI MSP-1 – *Manual of Standard Practice*

F. *California Building Code*, Chapter 19, Concrete

1.05 REGULATORY REQUIREMENTS

A. Construction shall comply with the *California Code of Regulations, Title 24, Part 2* (the *California Building Code*), most recent effective edition.

1.06 SUBMITTALS

A. Provide submittals according to the Conditions of the Contract and Division 1 “Submittal Procedures” section.

B. Refer to “Submittal Requirements and Schedule” at the end of this Section.

1.07 RECORD DOCUMENTS

A. Comply with requirements of Division 1, “Project Record Documents” section, and following:

1. Accurately record changes in construction from that called for on the Drawings and Specifications for Record Documents.

1.08 QUALITY ASSURANCE

A. All reinforcing shall be fabricated from steel manufactured in the United States.

B. Specified reinforcing bars shall be supplied from single sources only.

1.09 TESTS

A. Testing and analysis of reinforcing steel will be performed under provisions of Division 1, “Testing and Inspection” section.

1.10 DELIVERY, HANDLING AND STORAGE

A. DELIVERY:

1. Deliver bars new and free from rust and mill scale in original bundles tagged to identify placement and certify testing.

2. If reinforcement arrives at the site without tags or certificates, testing by the Owner's testing laboratory will be required in accordance with Division 1, “Testing and Inspection” section or such reinforcement will not be accepted for incorporation into the Project; Contractor shall reimburse the Owner for the costs of such tests.

B. HANDLING AND STORAGE

1. Transport reinforcing steel to the construction site; store and cover it in a manner which will ensure that no damage occurs from moisture, dirt, grease, or other cause that might impair bond to concrete.

2. Store a sufficient supply of approved reinforcing steel on the construction site at all times to ensure that there will be no delay in construction.

3. Maintain identification of steel after bundles are broken.

1.11 COORDINATION

A. Review architectural, structural, and civil drawings for anchor bolt schedules and for locations of anchors, inserts, conduits, sleeves, and other items which are required to be cast in concrete,

and make necessary provisions as required so that reinforcing steel will not interfere with the placement of such embedded items.

PART 2 - MATERIALS

2.01 REINFORCING BARS: New, deformed billet-steel bars, complying with ASTM A-615, grades as indicated on the drawings.

2.02 ACCESSORIES: Provide reinforcement accessories, consisting of spacers, chairs, ties, and similar items as required for spacing, assembling, and supporting reinforcement in place. Provide accessories fabricated from galvanized steel or approved plastic material, conforming to the applicable requirements of CRSI MSP-1.

2.03 TIRE WIRE: Galvanized steel wire conforming to ASTM A-82, except black steel may be used for concealed concrete work; 16 gauge, except heavier where indicated on the Drawings. Tie wire shall not protrude from concrete.

PART 3 – EXECUTION

3.01 FABRICATION

A. Fabricate steel reinforcement in accordance with the details indicated. Where specific details are not indicted or noted, comply with the applicable requirements of CBC, Chapter 19, and ACI SP-66.

B. Bend, cut, and replace bars accurately, as indicated. Bend bars cold at the mill; heating or field bending of bars is not permitted. Do not bend or straighten bars in any manner that will injure the material. Bars that have been heated for bending, bars with kinks or bends not indicated on the Drawings, and bars damaged by bending or straightening shall be removed and new reinforcement shall be provided.

3.02 PLACING

A. GENERAL: Place reinforcing steel in accordance with the Drawings and the applicable requirements of CRSI MSP-1 and ACI 318. Install reinforcement accurately and secure against movement, particularly under the weight of workmen and the placement of concrete.

B. REINFORCING SUPPORTS: Support bars on metal chairs or spacers on metal hangers, accurately placed and securely fastened to steel reinforcement in place. Support legs of accessories in forms without embedding in form surface. Space chairs and accessories in conformance with CRSI MSP-1. No wood will be permitted inside forms. Precast concrete cubes may be used to support reinforcing for footings and slabs on grade only.

C. PLACING AND TYING: Set reinforcing in place, space, and securely tie at splices and at crossing points and intersections in the position indicated, or as directed. Point ends of wire away from forms.

D. SPACING: Space bars as indicated. Where not indicated, the clear spacing for main longitudinal column reinforcement shall be not less than 1.5 times the nominal bar diameter, or 1-1/2 inches, or 1-1/3 times the maximum size aggregate, whichever is greater. For other parallel bars, where spacing is not indicated, the minimum clear spacing shall not be less than the nominal bar diameter, or one inch, or 1-1/3 times the maximum size aggregate, whichever is less. The clear distance limitations above also apply between the bars being spliced at a contact lap splice and adjacent bars.

E. SPLICES: Except for temperature bars in slabs and horizontal wall reinforcing, no splicing will be allowed for reinforcing bars unless detailed locations are indicated, or approval is given. Wherever possible, stagger splices of adjacent bars.

1. Lapped splices shall not be used for bars larger than No. 11. Stagger lapped splices for horizontal wall reinforcing and slab temperature bars by the required lap splice length minimum.

2. Welding of reinforcing steel will not be permitted.

3. Make mechanical butt splices in accordance with the splicing device manufacturer's recommendations. Mechanical splices shall develop 125 percent of the specified minimum yield tensile strength of the spliced bars.

F. DOWELS: Securely tie dowels in place before concrete is deposited. In the event there are no bars in position to which dowels may be tied, add a No. 3 minimum to provide proper support and anchorage. Bending of dowels after placement of concrete will not be permitted. Protect dowels extended for future construction from weather exposure. Strictly comply with safety law requirements for extended dowels.

G. CLEANING: At time of concrete placement, reinforcement shall be clean and free of coatings that would impair bond to concrete; otherwise, clean reinforcing by sandblasting.

H. Daylighting of tie wires is not permitted, no exception.

3.03 FIELD QUALITY CONTROL

A. Notify the District Inspector at least 5 working days ahead of each concrete placement and do not place any concrete until all reinforcing steel has been installed and has been approved by the Inspector. Complete all reinforcing in every way by the end of the working day which precedes concrete placement. Reinforcement not placed in accordance with the Drawings shall be removed and replaced.

B. Testing and inspections are specified in Division 1, “Testing and Inspection” section.

3.04 SUBMITTAL REQUIREMENTS AND SCHEDULE

A. Include this form with submittals of this Specification Section, unless a substitute product is being proposed, in which case refer to Division 1, "Substitutions" section, for substitution requests.

Contractor's Initials:____ [Contractor is to acknowledge with initials each submittal included]

____ Letter of explanation attached for each submittal not included.

____ All submitted products are as specified.

B. SUBMITTAL SCHEDULE

1. Product Information

____ a. Submit Certified Mill Test Reports for the reinforcing bars being provided that states the strength grade(s) and A.S.T.M. Standards to which the bars have been fabricated and that the steel used in fabrication was manufactured in the United States.

2. Shop Drawings

____ a. Prepare and submit placement drawings showing the size, locations and spacing of reinforcing in the various parts of the structure, with details as required, in accordance with ACI SP-66. Placement drawings shall be complete so that placement of the reinforcing may proceed without reference to the design drawings. Do not submit cutting and bending lists.

END OF SECTION

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SECTION 32 1723 - PAINTED PAVEMENT MARKINGS

PART 1 – GENERAL

1.01 DESCRIPTION

A. Provide materials, equipment and transportation and perform labor as required for construction of painted pavement markings including, but not limited to: documenting characteristics and locations of existing pavement and curb markings, cleaning pavements and curbs, constructing painted markings.

1.02 RELATED DOCUMENTS

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

1.03 RELATED WORK SPECIFIED ELSEWHERE

A. Section 321216: Asphalt Concrete Paving

1.04 REFERENCE SPECIFICATIONS / REFERENCE DETAILS

A. Construction materials and methods shall be in accordance with the *Standard Specifications and Standard Plans of the State of California Department of Transportation*, most recent effective editions (Caltrans Standards).

B. In case of conflict between Reference Specifications/ Details and these Project Specifications / Details, the more stringent provision shall govern, as determined by the Architect and Engineer.

1.05 GENERAL REQUIREMENTS

A. Contractor shall employ a licensed surveyor to provide basic layout control for striping, including:

1. Begin and end of each parking lot bay.

2. For angled parking, each end of stall stripe at least at each end of parking lot bay.

3. Each corner of square or rectangular recreational courts.

4. Radius points for curved stripes having radius less than 30 feet; points at 20’ spacing for stripes having longer radii.

B. For pavement rehabilitation work where plans call for existing pavement markings to be replaced in kind (parking lots or recreational areas), compile an accurately dimensioned record drawing which documents the following information in advance of damage to existing pavements:

1. layout and characteristics of existing lane lines and parking stall and access isle striping or recreational court lines, including: length, width and color of lines; degree of angled parking; width of lanes, stalls, bays and isles; dimensions of recreational courts.

2. location and size of parking stall designation legends and of recreational area legends.

3. location, type and size of directional arrows.

4. colors and limits of painted curbs and curb legends.

5. locations of limit lines and STOP legends.

6. locations and characteristics of other pavement legends, markings and delineation.

7. locations and color of speed bumps.

1.06 REGULATORY REQUIREMENTS

A. Painting of accessible parking spaces and access isles shall comply with the *California Code of Regulations, Title 24, Part 2* (the *California Building Code*), most recent effective edition, and with provisions of the Americans with Disabilities Act.

1.07 SUBMITTALS

A. Provide submittals according to the Conditions of the Contract and Division 1 “Submittal Procedures” section.

B. Refer to “Submittal Requirements and Schedule” at the end of this Section.

1.08 RECORD DOCUMENTS

A. Comply with requirements of Division 1, “Project Record Documents” section.

1.09 WARRANTY

A. Provide minimum 5 year warranty per D.S.A. Bulletin 10/01/02, revised 9/27/04.

PART 2 – MATERIALS

2.01 PAINT

A. Paint for pavement striping and marking shall be water-borne conforming to Section 84-3 of the Caltrans Standard Specifications.

2.02 PAINT COLORS

A. Paint colors shall be Traffic White, Traffic Yellow, Traffic Red, Accessible Blue, or Green, as applicable to the Drawings; Accessible Blue shall be color No. 15090 in Federal Standard 595b.

1. In general, color uses are as follows:

a. Limit line and STOP legend: white.

b. Disabled parking stall and access isle stripes: blue.

c. Disabled parking legends: white.

d. Standard parking stall, island and access isle stripes: yellow.

e. Traffic lane lines: yellow or white.

f. Pavement markings and legends: yellow.

g. Fire Lane – No Parking lines and legends: red.

h. No Stopping curb: red.

i. Drop-off curb: white.

j. Disabled Parking and Drop-off curb: blue.

k. Recreational courts: yellow, blue, red, green.

2.03 LINE WIDTHS

A. Parking lot lane, stall and islands: 4”-wide.

B. Recreational court stripes: 2”-wide, unless otherwise noted on plans.

C. Diagonal stripes for parking lot islands and access isles shall be at 5’ spacing, center to center, except for accessible parking isles which shall have diagonal lines at 3’ spacing, center to center.

D. Limit line: 12”-wide.

E. Tolerances

1. Line lengths and widths plus or minus ¼ inch on straight segments and plus or minus ½ inch on curved alignments.

2.04 PAVEMENT MARKING SIZES

A. Pavement use legends: 12 inches tall.

B. STOP legend: 8 feet tall.

2.05 PAVEMENT MARKINGS FOR THE DISABLED

A. Painted lines and markings on pavements shall be 4” wide. When blue color is used, it shall be equal to color No. 15090 per Federal Standard 595B.

B. Parking spaces for the disabled shall be marked according to CBC Sections 11B-502.3.

C. Tactile warning devices shall be conformance with CBC Section 11B-247.1 and Section 321313 of these Specifications.

D. Special warnings for disabled persons shall comply with CBC Sections 11B-247.1 / ADA Standards.

E. Provide minimum 5 year warranty per DSA Bulletin 10/01/02, revised 9/27/04.

PART 3 – EXECUTION

3.01 LIMITATIONS

A. Apply paint only to clean and dry surfaces, during favorable weather conditions, and when damage from precipitation, irrigation and traffic is not anticipated over the drying period.

B. Apply paint only when temperature is above 50 degrees F during the drying period.

C. Allow new pavement or seal coat to cure for 7 days minimum before applying paint.

D. Allow first coat of paint to cure for 24 hours minimum before applying second coat.

3.02 PREPARATION

A. Surfaces to be painted shall be dry and free of grease and loose dirt particles. Scrape and wire brush chipped or damaged paint on existing curbs. High pressure wash all curbs to be painted. Sweep and otherwise clean pavement as necessary to eliminate loose dust and other material before applying paint.

B. Perform layout with chalk or lumber crayon only. Cat-track centerline and lane stripes for review by Owner’s Representative prior to painting stripes.

3.03 APPLICATION

A. Apply paint with mechanical equipment to produce uniform straight edges using equipment and templates specifically designed for this purpose.

B. Apply all paint in two (2) coats with 24-hours minimum between coats.

1. Each coat shall include two (2) complete passes with a coverage of not less than 1 gallon per 150 square feet.

2. The paint application shall result in a uniform color and texture and shall completely cover and block-out the underlying surface; apply additional paint as necessary to achieve this result.

3. The second coat after 24 hours may be waived by the owner, in the owner's sole discretion, based on a satisfactory results from first paint coat and cost credit offered by contractor.

3.04 CLEANING UP

A. Remove drips, overspray, improper markings, and paint material tracked by traffic by sand blasting, wire brushing, or other method approved by Architect and Engineer.

B. Incorrect or conflicting markings shall be removed by sand blasting, wire brushing or grinding. If surface is damaged, repair surface by heating, tack coating and placing asphalt concrete fines. No paint blackout allowed.

3.05 SUBMITTAL REQUIREMENTS AND SCHEDULE

A. Include this form with submittals of this Specification Section, unless a substitute product is being proposed, in which case refer to Division 1, "Substitutions" section, for substitution requests.

Contractor's Initials:____ [Contractor is to acknowledge with initials each submittal included]

____ Letter of explanation attached for each submittal not included.

____ All submitted products are as specified.

B. SUBMITTAL SCHEDULE

____ 1. Submit manufacturer’s product data for paint which confirms conformance with Section 84-3 of the Caltrans Standards.

____ 2. Submit record striping plan pursuant to Paragraph 1.05A of this Section, if applicable.

____ 3. Submit color sample for green paint.

END OF SECTION

SECTION 32 3113 - CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Chain-link fences.
2. Swing gates.
3. Privacy slats.

B. Related Requirements:

1. Section 03 3000 "Cast-in-Place Concrete" for cast-in-place concrete post footings.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the following:

a. Fence and gate posts, rails, and fittings.
b. Chain-link fabric, reinforcements, and attachments.
c. Accessories: Privacy slats.
d. Gates and hardware.

B. Shop Drawings: For each type of fence and gate assembly.

1. Include plans, elevations, sections, details, and attachments to other work.
2. Include accessories, hardware, gate operation, and operational clearances.

C. Samples for Verification: For each type of component with factory-applied finish, prepared on Samples of size indicated below:

1. Privacy Slats: 6-inch long, including locking rail.

1.4 INFORMATIONAL SUBMITTALS

A. Product Certificates: For each type of chain-link fence, and gate.

B. Product Test Reports: For framework strength according to ASTM F1043, for tests performed by manufacturer and witnessed by a qualified testing agency or a qualified testing agency.

C. Sample Warranty: For special warranty.

1.5 FIELD CONDITIONS

A. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

1.6 WARRANTY

A. Special Warranty: Installer agrees to repair or replace components of chain-link fences and gates that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Failure to comply with performance requirements.
b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance: Chain-link fence and gate frameworks shall withstand the design wind loads and stresses for fence height(s) and under exposure conditions indicated according to ASCE/SEI 7.

1. Design Wind Load: 95 mph.

a. Minimum Post Size and Maximum Spacing: Determine according to CLFMI WLG 2445, based on mesh size and pattern specified.

B. Lightning Protection System: Maximum resistance-to-ground value of 25 ohms at each grounding location along fence under normal dry conditions.

2.2 CHAIN-LINK FENCE FABRIC

A. General: Provide fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle or twist according to "CLFMI Product Manual" and requirements indicated below:

1. Fabric Height: As indicated on Drawings.
2. Steel Wire for Fabric: Wire diameter of 0.148 inch (9 gauge).
    a. Mesh Size: 2 inches.
    b. Zinc-Coated Fabric: ASTM A392, Type II, Class 2, 2.0 oz./sq. ft. with zinc coating applied after weaving.
3. Selvage: Knuckled at both selvages.

2.3 FENCE FRAMEWORK

A. Posts and Rails: ASTM F1043 for framework, including rails, braces, and line; terminal; and corner posts. Provide members with minimum dimensions and wall thickness according to ASTM F1043 or ASTM F1083 based on the following:

1. Fence Height: As indicated on Drawings.
2. Heavy-Industrial-Strength Material: Group IA, round steel pipe, Schedule 40.
3. Horizontal Framework Members: Intermediate, top, and bottom rails according to ASTM F1043.
4. Brace Rails: ASTM F1043.
5. Metallic Coating for Steel Framework:
    a. Type A: Not less than minimum 2.0-oz./sq. ft. average zinc coating according to ASTM A123/A123M or 4.0-oz./sq. ft. zinc coating according to ASTM A653/A653M.

2.4 SWING GATES

A. General: ASTM F900 for gate posts and swing gates.

1. Gate Leaf Width: As indicated.
2. Framework Member Sizes and Strength: Based on gate fabric height as indicated.

B. Pipe and Tubing:

1. Zinc-Coated Steel: ASTM F1043 and ASTM F1083; protective coating and finish to match fence framework.
2. Gate Posts: Round tubular steel.
3. Gate Frames and Bracing: Round tubular steel.

C. Frame Corner Construction: Welded.

D. Hardware:

1. see Section 08 7100 “Door Hardware”

2.5 FITTINGS

A. Provide fittings according to ASTM F626.

B. Post Caps: Provide for each post.

C. Rail and Brace Ends: For each gate, corner, pull, and end post.

D. Rail Fittings: Provide the following:

1. Top Rail Sleeves: Pressed-steel or round-steel tubing not less than 6 inches long.
2. Rail Clamps: Line and corner boulevard clamps for connecting intermediate and bottom rails to posts.

E. Tension and Brace Bands: Pressed steel.

F. Tension Bars: Steel, length not less than 2 inches shorter than full height of chain-link fabric. Provide one bar for each gate and end post, and two for each corner and pull post, unless fabric is integrally woven into post.

G. Truss Rod Assemblies: Steel, hot-dip galvanized after threading rod and turnbuckle or other means of adjustment.

H. Tie Wires, Clips, and Fasteners: According to ASTM F626.

1. Standard Round Wire Ties: For attaching chain-link fabric to posts, rails, and frames, according to the following:

a. Hot-Dip Galvanized Steel: 0.148-inch- diameter wire; galvanized coating thickness matching coating thickness of chain-link fence fabric.

I. Finish:

1. Metallic Coating for Pressed Steel or Cast Iron: Not less than 1.2 oz./sq. ft. of zinc.

2.6 PRIVACY SLATS

A. Tubular Polyethylene Slats: Minimum 0.023-inch-thick tubular polyethylene, manufactured for chain-link fences from virgin polyethylene with UV inhibitor, sized to fit mesh specified for direction indicated, with vandal-resistant fasteners and lock strips.

B. Color: Black.

2.7 GROUT AND ANCHORING CEMENT

A. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C1107/C1107M. Provide grout, recommended in writing by manufacturer, for exterior applications.

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

2.8 GROUNDING MATERIALS

A. Comply with requirements in Section 26 0526 "Grounding and Bonding for Electrical Systems."

B. Connectors and Grounding Rods: Listed and labeled for complying with UL 467.

1. Connectors for Below-Grade Use: Exothermic welded type.
2. Grounding Rods: Copper-clad steel, 5/8 by 96 inches.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, pavement work, and other conditions affecting performance of the Work.

1. Do not begin installation before final grading is completed unless otherwise permitted by Architect.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 500 feet or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

3.3 CHAIN-LINK FENCE INSTALLATION

A. Install chain-link fencing according to ASTM F567 and more stringent requirements specified.

B. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil.

C. Post Setting: Set posts in concrete at indicated spacing into firm, undisturbed soil.

1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.

    a. Concealed Concrete: Place top of concrete 2 inches below grade or as indicated on Drawings to allow covering with surface material.

D. Terminal Posts: Install terminal end, corner, and gate posts according to ASTM F567 and terminal pull posts at changes in horizontal or vertical alignment of 15 degrees or more. For runs exceeding 500 feet, space pull posts an equal distance between corner or end posts.

E. Line Posts: Space line posts uniformly at 96 inches o.c.

F. Post Bracing and Intermediate Rails: Install according to ASTM F567, maintaining plumb position and alignment of fence posts. Diagonally brace terminal posts to adjacent line posts with truss rods and turnbuckles. Install braces at end and gate posts and at both sides of corner and pull posts.

1. Locate horizontal braces at midheight of fabric 72 inches or higher, on fences with top rail, and at two-third fabric height on fences without top rail. Install so posts are plumb when diagonal rod is under proper tension.

G. Top Rail: Install according to ASTM F567, maintaining plumb position and alignment of fence posts. Run rail continuously through line post caps, bending to radius for curved runs and terminating into rail end attached to posts or post caps fabricated to receive rail at terminal posts. Provide expansion couplings as recommended in writing by fencing manufacturer.

H. Intermediate and Bottom Rails: Secure to posts with fittings.

I. Chain-Link Fabric: Apply fabric to inside of enclosing framework. Leave 1-inch bottom clearance between finish grade or surface and bottom selvage unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.

J. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts, with tension bands spaced not more than 15 inches o.c.

K. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at one end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric according to ASTM F626. Bend ends of wire to minimize hazard to individuals and clothing.

1. Maximum Spacing: Tie fabric to line posts at 12 inches o.c. and to braces at 24 inches o.c.

L. Fasteners: Install nuts for tension bands and carriage bolts on the side of fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

M. Privacy Slats: Install slats in direction indicated, securely locked in place.

1. Vertically, for privacy factor of 70 to 75.
2. Include privacy slats at sides and roof of Visitor dugout enclosure

3.4 GATE INSTALLATION

A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation.

3.5 GROUNDING AND BONDING

A. Comply with requirements in Section 26 0526 "Grounding and Bonding for Electrical Systems."

B. Fence and Gate Grounding:

1. Ground for fence and fence posts shall be a separate system from ground for gate and gate posts.
2. Install ground rods and connections at maximum intervals of 1500 feet.
3. Fences within 100 Feet of Buildings, Structures, Walkways, and Roadways: Ground at maximum intervals of 750 feet.
4. Ground fence on each side of gates and other fence openings.

    a. Bond metal gates to gate posts.
    b. Bond across openings, with and without gates, except openings indicated as intentional fence discontinuities. Use No. 2 AWG wire and bury it at least 18 inches below finished grade.

C. Protection at Crossings of Overhead Electrical Power Lines: Ground fence at location of crossing and at a ground rod located a maximum distance of 150 feet on each side of crossing.

D. Grounding Method: At each grounding location, drive a grounding rod vertically until the top is 6 inches below finished grade. Connect rod to fence with No. 6 AWG conductor. Connect conductor to each fence component at grounding location.

1. Make grounding connections to each barbed wire strand with wire-to-wire connectors designed for this purpose.
2. Make grounding connections to each barbed tape coil with connectors designed for this purpose.

E. Connections:

1. Make connections with clean, bare metal at points of contact.
2. Make aluminum-to-steel connections with stainless-steel separators and mechanical clamps.
3. Make aluminum-to-galvanized-steel connections with tin-plated copper jumpers and mechanical clamps.
4. Make above-grade ground connections with mechanical fasteners.
5. Make below-grade ground connections with exothermic welds.
6. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.

3.6 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to perform tests.

3.7 ADJUSTING

A. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

B. Lubricate hardware and other moving parts.

END OF SECTION 32 3113

SECTION 32 8400 – IRRIGATION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Furnish all labor, materials, and equipment required to provide and install the irrigation system as indicated on the drawings and these specifications.

1.2 REQUIREMENTS OF REGULATORY AGENCIES

A. Comply with all local and state codes, ordinances, safety orders, and regulations of all legally constituted authorities having jurisdiction over this Work:

B. Obtain and pay for all plumbing permits and all inspections required by authorities stated above.

C. Notify the Landscape Architect in the event any equipment or methods indicated on the drawings or in the specifications conflict with local codes, prior to installation. In the event this notification is not performed, the contractor must assume full responsibility for revisions necessary.

1.3 CATALOG CUTS

A. Ten (10) days after award of Contract submit to the Landscape Architect for approval, five (5) copies of all manufacturer's catalog cuts, and specifications for all required products.

1.4 RECORD DRAWINGS

A. The Contractor shall maintain a complete and accurate set of record drawings. These drawings shall be kept up to date with the progress of the Work. The Owner shall furnish a set of drawings on which to record drawing conditions. Record drawings shall be updated on a weekly basis.

B. The Contractor shall indicate clearly and correctly Work installed differently from that shown on the Contract Drawings by dimensioning from two permanent points of reference. Show connections to existing water lines, ball valves, pressure supply pipe, control valves, quick couplers, and control wiring.

C. On completion of the Work, the Contractor shall submit the completed Record Drawings to the Landscape Architect for transfer to electronic file. Once complete, this final electronic file shall be reviewed by the Contractor and certified as complete and accurate records of work as-built.

1.5 CONTROLLER CHARTS

A. Shall be prepared by the Landscape Architect and installed in the controller by the Contractor. The Contractor shall delineate on a plan all irrigation zones and associated valve numbers.

1.6 DRAWINGS

A. For purposes of legibility, irrigation lines are essentially diagrammatic, although size and location of irrigation equipment are drawn to scale wherever possible. Make use of all data in all of the Contract Documents and verify this information at construction site.

1.7 MATERIALS TO BE FURNISHED

A. Prior to final inspection, the Contractor shall furnish the following materials to the District:

1. Two keys for each automatic controller.
2. One operating wrench to manually open and close operating nut on gate valves.

1.8 ON-SITE OBSERVATIONS

A. The Contractor shall notify the Landscape Architect forty-eight hours in advance for all required On-Site Observations. The final On-Site Observation shall require seven days advance notice. The following are required On-Site Observations:

1. Job start meeting.
2. Prior to start of work review existing irrigation system adjacent to the retrofit work. Review all circuits which may be affected by the new work and review with the Landscape Architect any existing defects or deficiencies that can be determined.
3. Review irrigation main line with the Landscape Architect prior to backfilling. Record drawings must be current at the time of these On-Site Observations.
4. Review with the Landscape Architect the irrigation main line when pressure test is complete.
5. Pressure supply lines shall be tested under hydrostatic pressure of one hundred fifty pounds per square inch for a period of two hours and must be approved by the Landscape Architect prior to backfilling.
6. Completed irrigation system shall be operated and reviewed by VUSD Staff, Landscape Architect, and Contractor to ensure irrigation coverage is providing head to head coverage and evenly distributing water over the turf area. Contractor shall make any adjustment to irrigation coverage or replace nozzle if requested by Landscape Architect or District Staff to improve irrigation coverage and minimize overspray onto adjacent pavement or buildings.

PART 2 - PRODUCTS

2.1 GENERAL

A. All irrigation equipment shall be new and unused prior to installation and shall conform to the irrigation plan and legend as specified.

2.2 CONTROL WIRES

A. 24 volt conductors shall be U.F. type, solid wire, U.L. approved for direct burial. Minimum size shall be 14 Ga. or as noted on drawings, used to connect remote control valve solenoids to the auto controller. Splice wires using 3M Model DBR-Y6 Series or approved equal.

2.3 SOLVENTS

A. PVC primer and solvents – As recommended by manufacturer. Weld-On, Christy, or equal.

2.4 PVC MAINLINE FITTINGS

A. Transitional fittings required to connect existing galvanized steel piping to new or existing PVC piping shall be by Romac or equal.

B. Mainline Fittings for pipe sizes shall be schedule 80 PVC, Type 1, Grade 1, Cell Classification 12454-B, side gated, Lasco or equal.

2.5 LATERAL NON PRESSURE LINE FITTINGS

A. Lateral Non-Pressure Line Fittings shall be Schedule 40 PVC, Type 1, Grade 1, Cell Classification 1244-B, side gated, Lasco or equal.

2.6 PVC FLANGE FITTINGS

A. Flange Fittings shall be PVC Schedule 80, Type 1, Grade 1, Loose Ringer, ANSI Class 150 Flange, Lasco series 954, Spears Vanstone Series, or approved equal, with full face $^{1}/_{8}$" thick elastomeric gasket, 5-70 Shore A hardness.

2.7 BALL VALVES – FOR RCV MANIFOLDS AND MANUAL WASH DOWN VALVE

A. Valves 2", and smaller shall be Spears Tru-Union Series, two (2) unions built in with Schedule 80 PVC Body, solvent-weld pipe connections, line size with EPDM O-Rings, Series 2329, or Colonial/Lasco VXX101N-SC Series.

2.8 SPRINKLER CONTROLLER

A. 16-Station wall mounted controller in stainless steel box with a total of ten (10) years prepaid internet service, Irritrol Model EGP8-S-EGP8-OPB-8-EGP-iCENTRAL-RM-iSVC-5Y.

2.9 REMOTE CONTROL VALVES

A. Remote Control Valves rated at 200 PSI, normally closed, red brass body, with manual shut-off and flow adjustments. Valves equipped with 2-watt, 24-volt AC, and 60/50 cycle solenoid. Superior 950-DW Series. No known equal.

2.10 QUICK COUPLING VALVES

A. Quick Coupling Valves shall be Red Brass body and bonnet, ¾" size, yellow colored thermoplastic cover, Rain Bird 33DRC. No known equal.

2.11 NIPPLES AND RISERS

A. Nipples and Risers shall be PVC Schedule 80.

2.12 MAINLINE PIPE

A. Mainline pipe sized 4", 3", 2 ½", 2", shall be standard white colored, Class 315 PVC, solvent weld pipe conforming to ASTM D2241, D1784. Pipe manufactured by Pacific Plastics, JM Eagle, or approved equal.

B. Main line pipe sized 1 ½" or less, shall be standard white colored, Schedule 40 PVC pipe, solvent weld pipe conforming to ASTM D1785, D1784 for irrigation water use. Pipe manufactured by Pacific Plastics, JM Eagle, or approved equal.

2.13 LATERAL PIPE

A. Lateral, non-pressure line shall be standard white colored, Schedule 40 PVC, solvent weld pipe conforming to ASTM D1785, D1784. Pipe manufactured by Pacific Plastics, JM Eagle, or approved equal.

2.14 NORMALLY OPEN MASTER VALVE

A. Normally open master valve shall be brass body, no minimum discharge flow required for operation. Superior Model 3300200 Series, 2" in size. No known equal.

2.15 FLOW SENSOR

A. Flow sensor shall be Schedule 40, PVC body, solvent weld connections, suitable for use with Rain master Eagle Plus Series auto controllers, manufactured by Creative Sensor Technology, 2" size, Model number CST-FSi-T20-01. No known equal.

2.16 LIQUID FERTILIZER DISPENSER

A. Liquid fertilizer dispenser shall be PVC tank with 10-gallon capacity, complete will all fittings to allow liquid fertilizer or supplements into the irrigation mainline, manufactured by Ez-Flo Corporation, Model EZ-010-HC. No known equal.

B. Completed assembly with tank shall be installed below grade and housed in a jumbo valve box, manufactured with HDPE, with dimensions of at least 24" wide x 36" long x 24" deep, by Carson Model 24361005-CARS, or approved equal.

2.17 INLINE FILTER

A. Inline filter shall be 2" plastic filter with 80 Mesa Screen, Amiad Model DFR2000080. Completed assembly housed in jumbo valve box, NDS Model 224BCB (17" x 24" x 18"), or approved equal.

PART 3 - EXECUTION

3.1 SITE CONDITIONS

A. Before starting Work on irrigation system, carefully check all grades to determine that Work may safely proceed, keeping within the specified material depths.

B. Do not willfully install the irrigation system as indicated on the Drawings when it is obvious in the field that unknown obstructions, field dimensions, or grade differences exist, that might not have been considered in the engineering. Such obstructions or differences should be brought to the attention of the Landscape Architect.

C. The installation of all irrigation materials, including pipe, shall be coordinated with the landscape Drawings to avoid interfering with the trees, shrubs, or other planting.

D. Lay out irrigation heads and make any minor adjustments required due to differences between site and Drawings. Any such deviations in layout shall be within the intent of the original Drawings, and without additional cost to the District. When directed by the Landscape Architect the layout shall be approved before installation.

3.2 WATER SUPPLY

A. Connections shall be per plans.

3.3 PIPE FITTINGS

A. All plastic threaded pipe and fittings shall be assembled using non-hardening sealant.

B. All plastic slip fittings shall be solvent welded as per pipe manufacturer's recommendations.

3.4 LINE CLEARANCE

A. All lines shall have a minimum clearance of four inches from each other, and six inches from lines of other trades. Parallel lines shall be installed directly over one another.

3.5 TRENCHING

A. Dig trench and support pipe continuously on bottom of ditch. Snake pipe in trench to an even grade as noted.

B. Provide minimum cover of 24 inches for all pressure supply lines.

C. Provide minimum cover of 24 inches for all control wires.

D. Provide minimum cover of twelve inches for all other non-pressure lines.

3.6 BACKFILLING

A. Backfill for trenching shall be compacted to a dry density equal to the adjacent undisturbed soil, and shall conform to the adjacent grades without dips, sunken areas, humps or other irregularities. Initial backfill on all lines shall be of a fine granular material with no foreign matter larger than one inch in size and six to eight inches deep.

B. All irrigation lines under paving shall be backfilled entirely with sand and compacted.

C. Trenches shall be backfilled promptly after the open trench inspection.

D. After initial backfill placement of 6" to 8" over mainline, place caution tape and complete backfill.

3.7 CONTROL WIRES AND CABLES

A. Unless otherwise specified, connections between controller and remote control valves shall be made with direct burial 14 gauge wires, manufactured by Paige Electric or approved equal. Direct bury 14 gauge wires shall be installed in accordance with valve manufacturer's wire chart and specifications. To prevent damage from rodents, install all 14 gauge remote control valve wires in a 2" or 3" SCH. 40 PVC electrical conduit with sweep elbows into and out of all remote control valve boxes, pull boxes, or directional changes. Refer to plan for specific conduit sizes for each wire bundled pulled on project.

B. Between controller and remote control valves, use a continuous 14 gauge wire. All 14 gauge wire splices shall be made with Model DBR-Y6 by 3M Products or Spears Model DS-400 series.

C. EV-CAB-SEN flow sensing cable shall be installed in a 1" Schedule 40 PVC electrical conduit installed 18" - 24” below grade. Conduit shall be installed per Plan with a minimum space of 3” between cable conduit and edge of main line pipe when that situation occurs or as directed by the V.U.S.D. representative in the field.

D. Wiring shall occupy the same trench and shall be installed along the same route as the pressure supply line wherever possible or as indicated on Plan.

E. An expansion coil of twelve inches shall be provided at each wire connection to each solenoid within the remote control valve box and a thirty six inch long expansion loop or coil shall be provided within all wire / cable pull boxes.

3.8 CONCRETE THRUST BLOCKS

A. Shall be installed at all mainline directional changes as shall conform to all AWWA Standards.

3.9 SLEEVING

A. All lines under paving shall be sleeved with either Class 200 PVC or Schedule 40 PVC pipe as per sleeving schedule on Plan. Sleeve pipe shall be sized ap minimum (3) three pipe sizes larger than the O.D. of the line to be sleeved.

3.10 FLUSHING THE MAINLINE

A. Make provisions to flush new main line clean and protect existing main line and existing circuits from any debris.

3.11 FLUSHING THE SYSTEM

A. After all new irrigation pipelines and risers are in place and connected, all necessary diversion work has been completed, and prior to installation of irrigation heads, the control valves shall be opened and a full head of water used to flush out the system.

3.12 ADJUSTING THE SYSTEM

A. Adjust valves, and alignment and coverage of all irrigation heads.

B. If it is determined that adjustments in the irrigation equipment will provide proper and more adequate coverage, make all necessary changes, without additional cost to the District, prior to any planting.

C. The entire system shall be operating properly before any planting operations commence.

3.13 CLEAN-UP AND REPAIR

A. Upon completion of the Work, make the ground surface level, remove excess materials, rubbish, debris, etc, and remove construction and installation equipment from the premises. Dispose of in a safe and legal manner.

B. Replace and/or repair to the satisfaction of the Landscape Architect all existing paving disturbed during the course of this work. New paving shall be the same type, strength, texture, finish, and be equal in every way to the material removed.

3.14 GUARANTEE

A. The entire irrigation system shall be guaranteed by the Contractor as to material and workmanship, including settling of backfilled areas for a period of one year following the date of final acceptance of the work.

B. This guarantee is in addition to, and not a limitation of, other rights the District may have under the Contract Documents.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT AND PAYMENT

A. Measurement and payment for all irrigation work will be made as the contract lump sum price bid and shall include full compensation for all items in the Contract Documents. Provide the lump sum price in the space provided on Bid Schedule of Work and Prices.

END OF SECTION 32 8400

SECTION 32 9000 – LANDSCAPE PLANTING

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. This section includes general requirements and specification for the landscape planting and landscape maintenance.

B. Related work

1. Section 32 84 00 - Irrigation
2. Section 32 9200 – Turf Renovation and Maintenance

1.2 REQUIREMENTS OF REGULATORY AGENCIES

A. Any required spraying Work shall be done in accordance with governing agencies

1.3 SUBMITTALS

A. Furnish material invoices indicating the quantities of fertilizers, soil amendments, and all materials delivered to the job site. Material invoices must be approved by the Landscape Architect prior to incorporating soil amendments and applying hydroseed materials.

B. Certificates shall be prepared by the supplier or distributor and shall indicate the quantities and qualities of materials used.

C. Plant Material – Submit clear photos of all plant material specified taken at the source. Indicate plant material height and spread measured at the source. Photos must clearly show the plant quality and size. The Landscape Architect will determine if the photos meet the specifications and if further site inspection at the nursery is required or if another source is required to produce the specified plant material

D. Contractor shall take (3) soil samples of graded landscape areas at different areas within the project scope. Send the soil samples to an approved soil testing laboratory for analysis to determine recommended quantities and types of fertilizer and organic amendments required to sustain the new planting areas. Send the soil test results to the Landscape Architect. All recommended soil fertilizers and organic amendments identified in the soil report shall be incorporated into the landscape soil planting areas within the site. The fertilizer and organic amendments identified in the specifications shall be used to generate a budget to cover the fertilizer and organic amendments required for the project base bid.

1.4 PROTECTION

A. Contractor shall check or locate existing structures, electric cables or conduits, utility lines and other existing features or conditions above or below ground level that might be damaged as a result of the operation. Questions or conflicts arising out of such examination prior to or during operation shall be immediately directed to the attention of the Landscape Architect for necessary action or decisions before resuming operation. Contractor shall be responsible for repair or replacement at no cost to the Owner for features or conditions damaged through failure to comply with the above procedures.

B. Protect existing trees and tree roots from any damage that may be caused as a result of any planting or irrigation operations.

1.5 ALTERNATES

A. Alternates will not be permitted, except where indicated, and as approved by the Landscape Architect.

1.6 MAINTENANCE

A. Includes continual maintenance of all landscape Work included in the Contract for a period of ninety (90) days from the time all Work is completed and approved.

1.7 LANDSCAPE ON-SITE OBSERVATIONS

A. The Contractor shall notify the Landscape Architect forty-eight (48) hours in advance for all required On-Site Observations. The final On-Site Observation shall require seven (7) days advance notice.

B. The Contractor shall submit for approval a complete work schedule indicating tentative dates for On-Site Observations.

C. Record drawings shall be current and present at the time of On-Site Observations and shall be updated on a weekly basis.

D. Landscape On-Site Observations shall be required for the following phases of Work:

1. Job start meeting.
2. Finish grading - When all fine grading work is complete, notify the Landscape Architect for approval prior to proceeding with the planting.
3. Soil Preparation - furnish certificates for soil amendments at this time. Quantities must be reviewed by the Landscape Architect prior to incorporating into soil. When all soil preparation work is complete notify the Landscape Architect for approval prior to proceeding with the work.
4. Irrigation System Review - See Irrigation Section.

5. Review plant material for quality prior to planting. The Landscape Architect has the right to reject any plant material that it deems unacceptable at time of delivery.
6. Review planting during the planting process.
7. Review planting after installation.
8. Pre-maintenance - When all Work has been completed a pre-maintenance walk thru shall be conducted and the contractor must receive approval from the Landscape Architect prior to starting the maintenance period.
9. Maintenance - Notify the Landscape Architect after the maintenance period has progressed for thirty days for a review of all work and make all corrections that are deemed necessary.
10. Final Review - After the ninety-day (90) maintenance period is complete notify the Landscape Architect for a final review of all work. All work must receive approval from the Landscape Architect prior to being deemed complete and or filing a notice of completion.

1.8 GUARANTEE

A. All plant material shall be guaranteed for one year. This guarantee is in addition to, and not a limitation of, other rights the District may have under the Contract Document.

PART 2 – PRODUCTS

2.1 ORGANIC AMENDMENTS

A. Nitrogen stabilized organic amendments as derived from wood residual

2.2 FERTILIZER

A. Soil preparation – shall be 'Turf Supreme' 16-6-8.

B. Maintenance – shall be 'Turf Supreme' 16-6-8.

2.3 SOIL

A. Soil shall be existing site soil as approved by the District Inspector.

2.4 MIXES

A. Backfill Mix for all plant material shall be (**For bid purposes only – Soil Test results taken by Contractor shall replace this specification section**):

1. 1/3 organic amendment
2. 2/3 amended topsoil
3. Commercial Fertilizer (15-15-15), 1 lb./cu. Yard
4. Iron, Zinc, Manganese, 1 oz. /cu. yd.

B. Soil preparation materials shall be the following per 1,000 sq. ft (**For bid purposes only – Soil Test results taken by Contractor shall replace this specification section**).

1. Four cubic yards organic amendments.
2. Two pounds of nitrogen.
3. Two pounds of phosphorus
4. Two pounds of potassium

2.5 PLANT MATERIAL

A. Plant Quality - Plants shall be fresh, well established, vigorous, of normal habit of growth, free of disease, insects, insect eggs, and larvae. Plants shall have healthy, normal root system, well filling their containers, but not to the point of being root-bound.

B. Plant Sizes - The height and spread of all plant material shall be measured with branches in their normal position when plant is installed.

C. Multi-branched trees as noted on the Drawings shall mean trees with three or more trunks and all trunks shall be equal in caliper.

D. Trees shall have a central leader with good taper and branches well distributed along the leader. Foliage must be well distributed throughout the tree with no more than one third of the foliage on one single branch.

E. Plant Quantities - Plant materials shall be furnished in size, quantities, species and in the spacing as indicated or noted on the Drawings. Symbols shall take precedence over plant counts, in case of discrepancy.

2.6 MULCH

A. Mulch shall be Agromin “ES-2”, clean chipped, dimensional lumber, free from all nails or other harmful materials and shall have 90% 2” size and 10% less than 2” size.

2.7 TREE STAKES

A. Tree stakes shall be 2-inch diameter lodgepole Pine, pressure treated with Chemonite (ACZA) @ 0.40 pounds per cubic feet for inground staking. Stakes shall be twelve (12) feet long.

2.8 TREE TIES

A. Tree ties shall be virgin flexible vinyl meeting ASTM D-412, with UV inhibitor, 24 inches long.

2.9 MAINTENANCE

A. Maintenance Materials used in conjunction with the maintenance Work shall conform to the material requirements originally specified for the Work

2.10 PRE-EMERGENT

A. Pre-emergent shall be Ronstar or approved equal.

PART 3 – EXECUTION

3.1 SITE CONDITIONS

A. No plant materials shall be planted until all operations in conjunction with the installation of the irrigation system is complete and approved by the Landscape Architect. Final grades shall be established, and the planting areas shall be properly prepared and graded.

3.2 GROUND PREPARATION – TREE PLANTING AREA (AS PER APPROVED SOIL TEST ANALYSIS)

A. After the Site Clearance and Preparation has been approved by the District planted areas shall be thoroughly cultivated to a depth of six inches to reduce any compaction, which occurs as a result of construction. Protect existing tree roots

B. Stones or rocks over 1” in size, construction refuse, and other deleterious material shall be removed from the site, safely and legally disposed of.

C. Finish grade all planting areas to a smooth, uniform surface ready for planting. Finish grade shall be one inch below finish grade of adjacent paved surfaces unless otherwise noted on Drawings.

3.3 PLANTING – TREES

A. Trees and shrub planting shall comply with details on Drawings.

B. Make necessary adjustments and excavate pits of square outline and vertical sides foe all plants. Scarify sides and bottoms of all plant pits.

C. Protect roots or ball of plants at all times from sun and drying winds.

D. If directed by the Landscape Architect, the Contractor shall prune in accordance with standard horticultural practice.

E. Wet soil thoroughly and allow to settle. Repeat this compaction procedure until soil is stable enough to permit aeration and drainage of plant material.

3.4 MULCH

A. Install two-inch layer of mulch throughout shrub areas. Finish grade shrub areas to a smooth uniform surface to receive mulch. Keep mulch away from tree and shrub crown. Dress mulch areas to present a clean uniform appearance when complete.

END OF SECTION 32 9000

SECTION 32 9200 – TURF RENOVATION AND MAINTENANCE

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Furnish all labor, materials, and equipment required to renovate the existing turf area. This work includes verticutting, thatching, sanding, mowing, and fertilizing as indicated in these specifications and illustrated on the drawings.

1.2 REQUIREMENTS OF REGULATORY AGENCIES

A. Any required spraying work shall be done in accordance with governing agencies and according to the policies of the District.

1.3 SUBMITTALS

A. Furnish material invoices indicating the quantities of fertilizers and all materials delivered to the job site. Material invoices must be approved by the District Inspector prior to incorporating.

B. Certificates shall be prepared by the Supplier or Distributor and shall indicate the quantities and qualities of materials used.

1.4 PROTECTION

A. Contractor shall check or locate existing structures, electric cables or conduits, utility lines and other existing features or conditions above or below ground level that might be damaged because of the operation. Questions or conflicts arising out of such examination prior to or during operation shall be immediately directed to the attention of the District for necessary action or decisions before resuming operation. Contractor shall be responsible for repair or replacement, at no cost to the District, for features or conditions damaged through failure to comply with the above procedures.

B. Protect existing trees and tree roots from any damage that may be caused as a result of any lawn renovation work.

1.5 ALTERNATES

A. Alternates will not be permitted, except where indicated.

1.6 QUALITY ASSURANCE

A. Renovation work shall be performed by a Contractor with a valid California State License Classification C-27, Landscape Contractor.

PART 2 - PRODUCTS

2.1 SAND

A. Sand for filling in low spots and or depressions shall be clean plaster sand.

2.2 FERTILIZER

A. Fertilizer shall be Best Triple Pro 15-15-15.

2.3 HYDROSEED MIX – TURF RENOVATION

A. Hydroseed mix shall be as follows:

1. Seed - Stover Pro Sports Field seed mix at the rate of 8 pound per 1,000 square feet.
2. Fertilizer at the rate of five pound of nitrogen per 1,000 square feet.
3. Soil stabilizer (ecology controls m-binder) at the rate of 100 pounds per acre.
4. Fiber at the rate of 1,500 pounds per acre.

PART 3 - EXECUTION

3.1 TURF LAWN RENOVATING

A. After all irrigation system improvements are approved by the District Inspector, the Turf Renovation work shall proceed.

B. Renovate lawn areas with “verticutter” machine as necessary to remove thatch and scarify soil surface to within ½” from soil level and sever existing turf stolons. Run the verticutter in both directions. Remove from the site all thatch created during this process.

C. After the renovation is approved by the District Inspector, mow lawn areas to uniform height.

D. Apply sand over uneven grade depressions as directed in the field. Level sanded areas flush with adjacent grades to create a smooth, uniform, playing surface.

E. Hydroseed turf with fertilizer as per Hydroseed Specs. Apply fertilizer at the rate of 4 pounds of nitrogen per 1,000 square feet evenly throughout the renovated turf area.

F. Once the turf renovation work is approved by the District, the District will take over the maintenance.

3.2 MAINTENANCE

A. After all Work indicated on the Drawings or herein specified including all planting and hydroseeding has been completed, and approved by the Landscape Architect, the ninety-day (90) day Maintenance Period shall begin.

B. Maintain all planted areas by means of continuous watering, weeding, mowing, re-seeding, cultivating, spraying, mulching, trimming, edging, and any operation necessary for their care and upkeep.

C. Lawn areas showing sparse growth or die back shall, within fifteen days of written notification, be planted with new sod or with approved hydroseed turf with materials originally specified.

D. Repair immediately any damage to planting areas.

E. Depressions caused by vehicles, equipment and foot traffic will be filled with soil, leveled, and replanted.

F. Exterminate gophers and moles, repair damage as above.

G. Clean-up all planted areas shall be kept free of debris and shall be cultivated and weeded at not more than ten-day intervals.

H. At completion of the maintenance period, all areas included in the Work shall be clean and free of debris and weeds; all plant materials shall be live, healthy, and free of infestation.

I. Fertilizing shall be applied at two pounds of actual Nitrogen per 1,000-sq. ft. to all planting areas thirty, sixty, ninety, and one hundred and fifteen days after the maintenance period is initiated.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT AND PAYMENT

A. Measurement and payment for all turf renovation work will be made as the contract lump sum price bid and shall include full compensation for all items in the Contract Documents. Provide the lump sum price in the space provided on Bid Schedule of Work and Prices.

END OF SECTION 32 9200

SECTION 33 4100 - STORM DRAINAGE PIPING

PART 1 - GENERAL

1.01 SUMMARY

A. Includes materials, equipment, transportation and labor as required to:

1. Make exploratory investigations, excavations and surveys as necessary to ascertain locations and physical characteristics of existing buried pipelines and conduits within work area and

2. Construct storm drainage piping and fittings.

1.02 RELATED DOCUMENTS

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

1.03 RELATED WORK SPECIFIED ELSEWHERE

A. Section 312300: Trenching and Backfilling

B. Section 312500: Construction Storm Water Pollution Prevention

C. Section 334900: Storm Drainage Structures

1.04 STANDARD SPECIFICATIONS

A. Construction materials and methods shall be in accordance with the *Standard Specifications for Public Works Construction,* 2021 edition (SSPWC), published by Building News, Inc., except as modified or otherwise specified herein (hereinafter the Standard Specifications).

B. In case of conflict between the Standard Specifications and the project specifications, the project specifications shall govern.

1.05 REFERENCE SPECIFICATIONS / REFERENCE DETAILS

A. Materials shall conform to the applicable requirements of *American Society for Testing and Materials (ASTM) Standards, American Water Works Association (AWWA) Standards and American National Standards Institute (ANSI) Standards*, latest editions.

B. Polyvinyl chloride (PVC) storm drain construction shall be in accordance with the *Handbook of PVC Pipe,* latest edition, published by the Uni-Bell Plastic Pipe Association.

C. Where called for on the Drawings or in these Specifications, construction materials and methods shall be in accordance with *City of Ventura Public Works Department Construction Standard Details*.

D. Where called for on the Drawings or in these Specifications, construction materials and methods shall be in accordance with the *Standard Specifications and Standard Plans of the State of California Department of Transportation,* most recent effective editions (CalTrans Standards). Where Metric Units of measure are used in the referenced CalTrans Standards, the equivalent English Units shall be used.

E. In case of conflict between the Standard Specifications and Reference Specifications, the Reference Specifications shall govern.

F. In case of conflict between Reference Specifications / Details and the project specifications / details, the more stringent provision shall govern, as determined by the Architect and the Engineer.

1.06 REGULATORY REQUIREMENTS

A. Construction shall comply with the *California Code of Regulations, Title 24, Part 2 (*the *California Building Code),* most recent effective edition.

1.07 SUBMITTALS

A. Provide submittals according to the Conditions of the Contract and Division 1 “Submittal Procedures” section.

B. Refer to “Submittal Requirements and Schedule” at the end of this Section.

1.08 RECORD DOCUMENTS

A. Comply with requirements of Division 1, “Project Record Documents” section, and following:

1. Accurately record location of catch basins, junction structures, piping, bends, connections, and appurtenant structures, including top-of-grate and pipe/structure invert elevations, for Record Documents.

2. Accurately record changes in construction from that called for on the Drawings and Specifications, including unexpected physical conditions and unmarked or inaccurately marked existing utilities, for Record Documents.

PART 2 - MATERIALS

2.01 STORM DRAIN PIPE AND FITTINGS

A. POLYVINYL CHLORIDE (PVC), ASTM D 3034

1. Pipe and fittings shall be Type PSM Poly-vinyl Chloride (PVC) with integrally molded bell and spigot for gasketed joint assembly, conforming to the most recent issue of ASTM Standard D-3034 (SDR 35) for 4" through 15" size and ASTM F-679 (Wall Thickness T-1) for 18" through 27" size, unless otherwise called for on the Drawings.

2. Joints shall comply with the most recent issue of ASTM Standard D-3212 with gaskets conforming to the most recent issue of ASTM Standard F-477.

B. POLYVINYL CHLORIDE (PVC), AWWA A C-900

1. Pipe and fittings for 4” through 12” size shall be Polyvinyl Chloride (PVC) Class 200, DR-14, cast iron pipe size, with integrally molded bell and spigot for gasketed joint assembly, meeting requirements of the most recent issue of ASTM Specification D-2241 and AWWA Standard C-900.

C. DUCTILE IRON

1. Ductile iron pipe (D.I.P.) shall be Pressure Class 350, with push-on joint ends, conforming to the most recent issue of AWWA Standard C-151.

   Fittings shall be cast or ductile iron conforming to the most recent issue of AWWA Standards C-110 or C-153.

2. Ductile iron pipe and fittings shall be lined with cement mortar sealed with a bituminous coating in accordance with the most recent issue of AWWA Standard C-104. The exterior surface of all fittings to be buried shall be coated with a 1-mil thick bituminous coating in accordance with the most recent issue of ANSI Standard A21.6. Lining and coating shall be at the place of manufacture.

3. Buried ductile iron pipe shall be encased during installation with polyethylene in accordance with the most recent issue of AWWA Standard C-105. Polyethylene film shall have a nominal thickness of 0.998 inches (8 mil).

D. RECTANGULAR CAST IRON PIPE

1. Rectangular cast iron pipe (C.I.P.) shall be No. A-470 as manufactured by Alhambra Foundry Company, Ltd., or equivalent, with bell and spigot ends and 5'-0" laying length.

2. Cast iron adapters for transition from round to rectangular pipe shall be Alhambra Foundry No. A-480, or equivalent.

E. REINFORCED CONCRETE PIPE

1. Reinforced concrete pipe (RCP) shall conform with the most recent issue of ASTM Standard C-76 for strength Class III (1350-D) minimum.

2. Joints shall be tongue and groove type to be fully mortared, inside and out, during installation.

F. HIGH DENSITY POLYETHYLENE (HDPE) PIPE, GASKETED JOINTS

1. HDPE pipe and fittings for 4" through 48" size shall be N-12 Prolink WT (watertight) series as manufactured by Advanced Drainage Systems, Inc. (ADS).

2. Lateral connections to HDPE mainlines shall be made using manufacturer's Watertight Series 35 thermo-molded PVC reducing wye fittings.

3. Connections to concrete structures shall be made using manufacturer's Watertight Series thermo-molded PVC coupling cast into structure wall with waterstop at midpoint of wall.

4. Pipe and fitting shipping, handling and installation shall be in accordance with the manufacturer's recommended procedures.

2.02 SUBDRAIN PIPE AND FITTINGS

A. Pipe and fittings 4" and 6" size shall be Poly-Vinyl Chloride (PVC) conforming to the most recent issue of ASTM D-1785 (SCH 40) assembled using solvent weld joints.

B. Perforations shall be ½" diameter and shall be in two rows parallel with the pipe axis and 120° apart (60° above the pipe invert on each side).

C. Solvent cement shall comply with ASTM D-2564.

D. Perforated pipe shall be full encapsulated within a filter sock having an E.O.S. of 70 or less.

PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS

A. Schedule gravity pipeline construction ahead of other underground conduit construction.

B. Before beginning work, determine or verify the location and flowline elevation of all existing drainage structures and pipes to be joined by new construction.

C. Before beginning work, determine or verify the location and depth of all existing structures, pipes, or conduits which cross or otherwise may conflict with new construction.

D. Before beginning work, verify that excavation will not take place below a line projected downward at a 2 horizontal to 1 vertical slope from a point 9 inches above the bottom of

existing or proposed structure foundations adjacent to the work; if proposed trench / foundation geometry is determined to be contrary to this requirement, request direction from Owner's Representative before proceeding with the work.

E. Employ a Licensed Surveyor to provide line and grade control stakes for construction of storm drain facilities, to survey locations of existing facilities to be joined by or which may interfere with new construction, and to provide conformation during construction that facilities are at required line and grade.

F. Begin gravity pipeline construction at the lowest point of discharge and proceed in the upgrade direction with the pipe bell end pointing upgrade.

3.02 EXPLORATORY INVESTIGATION, EXCAVATION AND SURVEYING

A. LOCATING AND MARKING FACILITIES

1. Before beginning trenching or other excavation, investigate and determine the locations of all existing utilities that are included in the work area, or which may be affected by the work, and mark these locations at the site with paint or flags. Utilities shall mean water, sewer, storm drain, gas, electrical power, and data and voice communication piping or conduits and wiring, and appurtenances.

B. EXPOSING BURIED FACILITIES

1. For existing buried piping, conduits, and structures to be joined by proposed construction, or which may cross or otherwise interfere with proposed construction, excavate to expose said facilities for purpose of determining exact location, configuration, type, and size. Exercise care to avoid damage to facilities which are to remain in service.

C. SURVEYING EXPOSED FACILITIES

1. Pursuant to Paragraph 3.02-B hereof, employ a Licensed Land Surveyor to determine horizontal and vertical locations of existing buried piping, conduits and structures to be joined by new construction or which cross or may otherwise interfere with proposed construction and provide this information to Engineer for review. Allow at least five working days for review. More time may be required depending on completeness of information provided and on extent of conflicts, if any.

2. Before beginning trenching for a proposed storm drain which will be constructed with less than 10-foot clear separation from an existing or proposed potable water mainline, determine by survey that the storm drain will have a clear separation of at least 4 feet horizontally from, and at least 1 foot vertically below, the water main.

3.03 EXCAVATION EXAMINATION

A. Verify that excavation dimensions and elevations are as indicated on the Drawings, including due allowance for required thickness of bedding material, and that the excavation is ready to receive storm drainage structure and/or pipeline work.

B. Verify that excavation finish subgrade condition has been reviewed and approved by the Construction-Phase Geotechnical Engineer.

3.04 EXCAVATION PREPARATION

A. Hand trim excavations if required for conformance with dimensions and elevations indicated on the Drawings. Remove excess material.

3.05 PIPE INSTALLATION

A. Unless otherwise called for on the Drawings, the minimum permissible slope of storm drain piping is one percent (1/8-inch per foot).

B. Install and join pipe and fittings to lines and grades indicated on the Drawings in accordance with manufacturer's instructions and with applicable requirements of the Standard Specifications, Reference Specifications, and Reference Details. Hand shape bedding material as required to accommodate and to provide uniform support for pipe barrel and bell and for pipe fittings.

C. If the design slope for storm drain piping is less than one percent (1/8-inch per foot), before placing pipe zone backfill have Licensed Surveyor confirm that line and grade of pipe and fittings conform with plan requirements by determining invert elevation of in-place piping opposite each grade stake.

D. Construct PVC pipe bends using multiple 22½-degree fittings installed in series to achieve required deflection.

E. Construct PVC pipe-to-pipe junctions using 45 degree straight or reducing wye fittings with branch laid at lateral pipe slope. Saddles are not permitted.

F. Where cast or ductile iron pipe will remain in contact with soil after construction, encase the pipe in a polyethylene sheath, conforming to Paragraph 2.01-C.3 hereof, during installation.

3.06 FIELD QUALITY CONTROL

A. Request inspection by Owner's Representative after installation and assembly of, but before covering, storm drainage piping.

B. Before construction of pavement, walkways and other permanent surface improvements, provide a construction record drawing of the system prepared by a California Registered Land Surveyor to include top of grate or solid cover and inlet and outlet invert elevations of all storm drain structures, whether located in hard surfaced or in dirt / landscaped areas. Elevation measurements shall be accurate to 0.01 foot.

C. Before construction of pavement, walkways and other permanent surface improvements, perform Water Exfiltration Test on storm drain piping and structures per SSPWC Section 306-1.4.2 except that “sewer” shall mean storm drain, “manhole” shall mean catch basin, water test level shall be 4 feet above catch basin invert or to top of frame level, whichever is less, and test period shall be 4 hours.

D. Upon completion of construction of the storm drain system and with 48 hours notice to Owner's Representative, thoroughly clean and wash-down all inlets and storm drain piping. Immediately after cleaning, perform mandrel testing of PVC storm drains in accordance with Section 306-1.2.12 of the SSPWC.

E. Within 48 hours of system cleaning and mandrel testing and prior to allowing any substance other than water into the storm drain system, supply water into the system for system review by the Owner's Representative.

If standing water is observed anywhere in system, third party video taping of the system shall then be scheduled by the Owner's Representative and performed at the Contractor's expense.

F. Surveying, cleaning, mandrel testing and videotaping of the storm drain system shall be at Contractor's expense. Any deviation from the approved plans and design intent noted by the Owner's Representative during this process shall be corrected by Contractor at Contractor's expense and to the satisfaction of the Owner's Representative prior to acceptance of the system and final payment.

G. ACCEPTABLE TOLERANCES:

1.	Top-of-Grate:	½ inch (0.04 foot) maximum deviation above or below design elevation in dirt surface. ¼ inch (0.02 foot) maximum deviation above or below design elevation in concrete or A.C. pavement surfacing.
2.	Structure invert:	½ inch (0.04 foot) deviation above or below design elevation and no standing water in structure or upstream pipe.
3.	Pipe Invert:	½ inch (0.04 foot) maximum deviation above or below design elevation at any location or 10

percent of design slope over any reach, whichever is less, and no standing water.

4. In all such cases, deviations within the specified tolerances shall be compensating such that the average design slopes and elevations conform to those specified per plan.

Section continues on next page.

3.07 SUBMITTAL REQUIREMENTS AND SCHEDULE

A. Include this form with submittals of this Specification Section, unless a substitute product is being proposed, in which case refer to Division 1, "Substitutions" section, for substitution requests.

Contractor's Initials:____ [Contractor is to acknowledge with initials each submittal included]

____ Letter of explanation attached for each submittal not included.

____ All submitted products are as specified.

B. SUBMITTAL SCHEDULE

____ 1. Submit manufacturer's product data and recommended installation procedures for storm drain pipe and fittings.

END OF SECTION 334100

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SECTION 33 4900 - STORM DRAINAGE STRUCTURES

PART 1 – GENERAL

1.01 SUMMARY

A. Includes materials, equipment, transportation and labor as required for construction of cast-in-place catch basins and precast concrete manholes on storm drain piping systems.

1.02 RELATED DOCUMENTS

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

1.03 RELATED WORK SPECIFIED ELSEWHERE

A. Section 312300: Trenching and Backfilling

B. Section 312500: Construction Storm Water Pollution Prevention

C. Section 321313: Site Concrete

D. Section 334100: Storm Drainage Piping

1.04 STANDARD SPECIFICATIONS

A. Construction materials and methods shall be in accordance with the *Standard Specifications for Public Works Construction,* 2021 edition (SSPWC), published by Building News, Inc., except as modified or otherwise specified herein (hereinafter the Standard Specifications).

B. In case of conflict between the Standard Specifications and the Project Specifications, the Project Specifications shall govern.

1.05 REFERENCE SPECIFICATIONS / REFERENCE DETAILS

A. Materials shall conform to the applicable requirements of *American Society for Testing and Materials (ASTM) Standards, American Water Works Association (AWWA) Standards and American National Standards Institute (ANSI) Standards*, latest editions.

B. Polyvinyl chloride (PVC) storm drain construction shall be in accordance with the *Handbook of PVC Pipe,* latest edition, published by the Uni-Bell Plastic Pipe Association.

C. Where called for on the Drawings or in these Specifications, construction materials and methods shall be in accordance with *City of Ventura Public Works Department Construction Standard Details*.

D. Where called for on the Drawings or in these Specifications, construction materials and methods shall be in accordance with the *Standard Specifications and Standard Plans of the State of California Department of Transportation,* most recent effective editions (CalTrans Standards). Where Metric Units of measure are used in the referenced CalTrans Standards, the equivalent English Units shall be used.

E. In case of conflict between the Standard Specifications and Reference Specifications, the Reference Specifications shall govern.

F. In case of conflict between Reference Specifications / Details and the Project Specifications / details, the more stringent provision shall govern, as determined by the Architect and the Engineer.

1.06 REGULATORY REQUIREMENTS

A. Construction shall comply with the *California Code of Regulations, Title 24, Part 2 (*the *California Building Code),* most recent effective edition.

1.07 SUBMITTALS

A. Provide submittals according to the Conditions of the Contract and Division 1 “Submittal Procedures” section.

B. Refer to “Submittal Requirements and Schedule” at the end of this Section.

1.08 RECORD DOCUMENTS

A. Comply with requirements of Division 1, “Project Record Documents” section, and following:

1. Accurately record location of catch basins, junction structures, piping, bends, connections, and appurtenant structures, including top-of-grate and pipe/structure invert elevations, for Record Documents.

2. Accurately record changes in construction from that called for on the Drawings and Specifications, including unexpected physical conditions and unmarked or inaccurately marked existing utilities, for Record Documents.

PART 2 - MATERIALS

2.01 CONCRETE AND REINFORCING STEEL FOR DRAINAGE STRUCTURES

A. CONCRETE

1. Concrete shall conform with the *California Code of Regulations, Title 24*, Part 2, Chapter 19, concrete.

2. Concrete shall conform with Section 321313 hereof.

B. REINFORCING STEEL

1. Reinforcing steel shall be deformed billet-steel for concrete reinforcing conforming to the most recent issue of ASTM Standard A-615, Grade 60 for bar sizes No. 5 and larger, Grade 40 for bar sizes No. 3 and No. 4. Grade 60 acceptable for all sizes.

2.02 CATCH BASINS, CAST-IN-PLACE CONCRETE

A. DETAIL DRAWING

1. Where called for on the Drawings, catch basin shall be cast-in-place. Cast-in-place catch basin shall be formed inside and outside and shall conform to the applicable Detail presented on the Drawings or to the referenced Standard Plan or Detail.

B. CONSTRUCTION JOINTS

1. Drainage structure base and walls to a height equal to one nominal pipe diameter (12 inches minimum) above the outlet soffit (top of pipe) shall be poured monolithically. If judged necessary by contractor, one construction joint may be used between this height and the top of structure; surface of initial pour shall be roughened to provide ¼" amplitude and shall be coated with epoxy prior to final pour.

C. WATERSTOP

1. Waterstop for pipe penetrations of catch basin walls shall be elastomeric PVC Concrete Manhole Adapter for 4" through 12" nominal diameter pipe and Large Diameter Waterstop for nominal pipe diameters greater than 12", as manufactured by FERNCO or approved equivalent.

2.03 MANHOLES

A. Storm drain manhole shall conform with the applicable detail presented on the Drawings or to the referenced Standard Plan or Detail.

1. All joints between wall sections and between grade rings shall be sealed.

2. Full circumference waterstop shall be cast-in-place on pipe penetration at midpoint of wall.

3. Manway shaft shall be centered above upstream pipe inlet.

4. Channel through base shall slope (drop) across structure as called for on Drawings and 0.10 foot minimum.

5. Solid cover shall be lettered: "STORM DRAIN." Frame and cover shall be galvanized if located within concrete flatwork area.

6. Frame and cover shall conform with additional requirements of Paragraph 2.07 below.

7. When manhole is located within concrete flatwork area, frame for cover shall be cast directly in flatwork concrete.

2.04 GRATES / COVERS

A. Unless otherwise called for on the Drawings or specified herein, catch basin grates shall be bicycle-proof (not ADA compliant) H-20 traffic-weight cast iron grate supplied with frame. Size shall be as manufactured for catch basin clear opening called for on the Drawings. Dimensions of bicycle-proof grate openings shall comply with CalTrans Standard Plan D77-B (nominally 1 ½" wide by 5" long).

B. When catch basin is to be constructed in walkway or where otherwise called for on the Drawings, grate shall be ADA compliant non-traffic weight cast iron grate supplied with frame. ADA compliant grate shall have slotted openings, uniformly ½ inch in width, to be oriented perpendicular to the path of pedestrian travel.

C. If required ADA compliant grate is in vehicle traffic area, H-20 traffic-weight welded steel grate with frame meeting specified dimensional requirements shall be used in place of cast iron.

D. Where high-heel-proof grate is called for on the Drawings, the grate shall be specifically manufactured for that purpose. Grate retrofitted with perforated plate is not acceptable.

E. Where catch basin or other drainage structure is to be constructed with solid cover, cover shall be supplied with diamond tread non-slip surface.

F. In all cases, grates and frames shall be galvanized and supplied with at least two (2) Stainless Steel Allen-head capscrews connecting grate to frame to prevent vandalism. When tightened in place, top of capscrew shall not protrude above surface of grate or frame.

Solid covers and frames shall be galvanized only if structure is located in concrete flatwork area.

G. These requirements apply to all drainage structures, whether detailed on the Drawings or referenced.

2.05 RIP RAP / CHECK DAMS / SPLASH PADS

A. ROCK

1. Rock for check dams, splash pads and rip rap shall be angular quarry stone and shall be sound, durable, hard, resistant to abrasion and free from laminations, weak cleavage planes, and the undesirable effects of weathering; it shall be of such character that it will not disintegrate from the action of air, water, or the conditions to be met in handling and placing.

2. All rock material shall be clean and free from deleterious impurities, including alkali, earth, clay, refuse and adherent coatings.

B. GROUT

1. Cement grout for check dams, splash pads and rip rap, where called for on the plans, shall be fine grout conforming to ASTM Standard C476, latest revision, and shall attain minimum compressive strength of 2000 PSI in 28 days. Slump shall be 8 to 11 inches.

PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS

A. Before beginning work, determine or verify the location and flowline elevation of all existing drainage structures and pipes to be joined by new construction.

B. Before beginning work, verify that excavation will not take place below a line projected downward at a 2 horizontal to 1 vertical slope from a point 9 inches above the bottom of existing or proposed structure foundations adjacent to the work; if proposed excavation / foundation geometry is determined to be contrary to this requirement, request direction from Owner's Representative before proceeding with the work.

C. Employ a Licensed Surveyor to provide line and grade control stakes for construction of storm drain facilities, to survey locations of existing facilities to be joined by or which may interfere with new construction, and to provide conformation during construction that facilities are at required line and grade.

3.02 EXCAVATION EXAMINATION

A. Verify that excavation dimensions and elevations are as indicated on the Drawings, including due allowance for required thickness of bedding material, and that the excavation is ready to receive storm drainage structure and/or pipeline work.

B. Verify that excavation finish subgrade condition has been reviewed and approved by the Construction-Phase Geotechnical Engineer.

3.03 EXCAVATION PREPARATION

A. Hand trim excavations if required for conformance with dimensions and elevations indicated on the Drawings. Remove excess material.

3.04 CATCH BASINS

A. Have approved grates or covers and frames on-site before forming cast-in-place drainage structures.

B. Construct cast-in-place and pre-cast concrete drainage structures in accordance with the Drawing details or Reference Details to the lines and grades and dimensions indicated on the Drawings. Catch basins shall be placed such that grates are aligned to match (parallel to) adjacent structures.

C. Install full circumference water stops around pipe penetrations in both cast-in-place and pre-cast structure walls.

D. Configure the bottoms of both cast-in-place and pre-cast drainage structures to provide positive drainage to the flowline of the outlet pipe so as to prevent ponding.

3.05 RIP RAP/CHECK DAMS / SPLASH PADS

A. Perform grading operations as necessary to construct subgrade to required line, grade and compaction density.

B. Hand trim excavation if required for conformance with dimensions and elevations indicated on the Drawings. Remove excess material.

C. Request observation and testing of subgrade condition by Construction-Phase Geotechnical Engineer; do not place geotextile fabric or rock until subgrade has been approved.

D. Place geotextile fabric (where called for) and rock in accordance with the Drawings.

E. Where rock is to be grouted, hold grout level down or back 3 inches from exposed rock surface.

3.06 FIELD QUALITY CONTROL

A. Request inspection by Owner's Representative after forming and placing reinforcing steel for cast-in-place drainage structures, and placing pipe with waterstop at wall penetrations, but before scheduling the concrete pour.

B. Before construction of pavement, walkways and other permanent surface improvements, provide a construction record drawing of the system prepared by a California Registered Land Surveyor to include top of grate or solid cover and inlet and outlet invert elevations of all storm drain structures, whether located in hard surfaced or in dirt / landscaped areas. Elevation measurements shall be accurate to 0.01 foot.

C. Before construction of pavement, walkways and other permanent surface improvements, perform Water Exfiltration Test on storm drain piping and structures per SSPWC Section 306-1.4.2 except that “sewer” shall mean storm drain, “manhole” shall mean catch basin, water test level shall be 4 feet above catch basin invert or to top of frame level, whichever is less, and test period shall be 4 hours.

D. Upon completion of construction of the storm drain system and with 48 hours’ notice to Owner's Representative, thoroughly clean and wash-down all inlets and storm drain piping. Immediately after cleaning, perform mandrel testing of PVC storm drains in accordance with Section 306-1.2.12 of the SSPWC.

E. ACCEPTABLE TOLERANCES:

1. Top-of-Grate: ½ inch (0.04 foot) maximum deviation above or below design elevation in dirt surface.

   ¼ inch (0.02 foot) maximum deviation above or below design elevation in concrete or A.C. pavement surfacing.

2. Structure invert: ½ inch (0.04 foot) deviation above or below design elevation and no standing water in structure or upstream pipe.

3. Pipe Invert: ½ inch (0.04 foot) maximum deviation above or below design elevation at any location or 10 percent of design slope over any reach, whichever is less, and no standing water.

4. In all such cases, deviations within the specified tolerances shall be compensating such that the average design slopes and elevations conform to those specified per plan.

3.09 SUBMITTAL REQUIREMENTS AND SCHEDULE

A. Include this form with submittals of this Specification Section, unless a substitute product is being proposed, in which case refer to Division 1, "Substitutions" section, for substitution requests.

Contractor's Initials:____ [Contractor is to acknowledge with initials each submittal included]

____ Letter of explanation attached for each submittal not included.

____ All submitted products are as specified.

B. SUBMITTAL SCHEDULE

____ 1. Submit manufacturer's product data for grates, solid covers and frames for drainage structures.

____ 2. Submit manufacturer's product data for waterstop to be used for pipe connections at drainage structures.

____ 3. Submit concrete mix design for each class of concrete and grout required.

END OF SECTION