



PROJECT MANUAL

BEAR CREEK HIGH SCHOOL NEW AGRICULTURAL SCIENCE BUILDING INCREMENT 1

PROJECT/CONTRACT NUMBER: 0819-8019-1

Site Work for New Ag Science Building

LODI UNIFIED SCHOOL DISTRICT

December 14, 2023

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END OF DOCUMENT

LIST OF SCHEDULES

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

a. Bid Dates

- 1) Advertise to Bid (first) December 14, 2023
- 2) Advertise to Bid (second) December 21, 2023
- 3) Pre-Bid Conference January 4, 2024
- 4) Request For Information January 11, 2024
- 5) Addendum (last) January 18, 2024
- 6) Bids Due January 25, 2024
- 7) Board Award February 6, 2024 (Date dependent on Board Schedule approval at the December 12, 2023 BOE Meeting)

b. Contracts

- 1) Bond Preparation February 7, 2024
- 2) Contract Execution February 14, 2024

c. Pre-Construction Activities

- 1) Start Date March 18, 2024
- 2) Submittals and Approvals February 7, 2024
- 3) Materials Ordering/Stockpiling (IF NECESSARY) February 2024 – May 2024
- 4) School Concludes for Summer May 31, 2024

d. Construction

- 1) Date of facility availability March 18, 2024
- 2) Construction, All Units March 18
- 3) Begin turning over spaces to District July 17, 2024

e. Occupancy: Site Work Only

f. Completion/Close-out

- 1) Substantial Completion Date July 17, 2024
- 2) Complete Minor Finish Work July 31, 2024
- 3) Complete Punch List Work July 31, 2024
- 4) Closeout/Completion August 31, 2024

END OF DOCUMENT

NOTICE TO BIDDERS

1. Notice is hereby given that the governing board ("Board") of the Lodi Unified School District ("District") will receive sealed bids for the following project, **Bear Creek High School Agriculture Complex, Bid Package 0819-8019** ("Project" or "Contract"):

2. The Project consists of:

Grading, sitework, and underground utilities for the New Agricultural Science Classroom Building

3. To bid on this Project, the Bidder is required to possess one or more of the following State of California contractors' license(s):

A, and/or B

The Bidder's license(s) must remain active and in good standing throughout the term of the Contract.

4. To bid on this Project, the Bidder is required to be registered as a public works contractor with the Department of Industrial Relations pursuant to the Labor Code.
5. Contract Documents will be available on or after December 14, 2023, for review at the District Facilities Office, and may be downloaded from the District's website using the **<https://www.lodiUSD.net/about/bonds#facilities>** link. In addition, Contract Documents are available for bidders' review at the following builders' exchanges:

A. Builder's Exchange of Stockton: (209) 478-1000

B. Builder's Exchange of Sacramento: (916) 442-8991

C. Valley Builders Exchange: (209) 522-9031

6. Sealed bids will be received until 2:00 p.m., January 25, 2024, at the District Facilities Office, 880 N. Guild Ave., Lodi, California 95240 at or after which time the bids will be opened and publicly read aloud. Any bid that is submitted after this time shall be nonresponsive and returned to the bidder. Any claim by a bidder of error in its bid must be made in compliance with section 5100 et seq. of the Public Contract Code.
7. Pursuant to Public Contract Code section 20111.6, only prequalified bidders will be eligible to submit a bid for contracts \$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 unopened to the bidder. Moreover, any bid listing subcontractors holding C-4, C-7, C-10, C-16, C-20, C-34, C-36, C-38, C-42, C-43 or C-46 licenses, if used, who have not been prequalified, shall be deemed nonresponsive and will not be considered.

8. All bids shall be on the form provided by the District. Each bid must conform and be responsive to all pertinent Contract Documents, including, but not limited to, the Instructions to Bidders.
9. A bid bond by an admitted surety insurer on the form provided by the District a cashier's check or a certified check, drawn to the order of the Lodi Unified School District, in the amount of ten percent (10%) of the total bid price, shall accompany the Bid Form and Proposal, as a guarantee that the Bidder will, within seven (7) calendar days after the date of the Notice of Award, enter into a contract with the District for the performance of the services as stipulated in the bid.
10. A voluntary pre-bid conference and site visit will be held on January 4, 2024, at 10:00 a.m. at 10555 Thornton Road, Stockton, California 95209. All participants are required to meet and sign at the Flag Pole. The site visit is expected to take approximately 1 Hour. Failure to attend or tardiness will render bid ineligible.
11. The successful Bidder shall be required to furnish a 100% Performance Bond and a 100% Payment Bond if it is awarded the Contract for the Work.
12. The successful Bidder may substitute securities for any monies withheld by the District to ensure performance under the Contract, in accordance with the provisions of section 22300 of the Public Contract Code.
13. The successful bidder will be required to certify that it either meets the Disabled Veteran Business Enterprise ("DVBE") goal of three percent (3%) participation or made a good faith effort to solicit DVBE participation in this Contract if it is awarded the Contract for the Work.
14. The Contractor and all Subcontractors under the Contractor shall pay all workers on all Work performed pursuant to this Contract not less than the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work as determined by the Director of the Department of Industrial Relations, State of California, for the type of work performed and the locality in which the work is to be performed within the boundaries of the District, pursuant to section 1770 et seq. of the California Labor Code. Prevailing wage rates are also available from the District or on the Internet at: <<http://www.dir.ca.gov>>.
15. This Project is subject to labor compliance monitoring and enforcement by the Department of Industrial Relations pursuant to Labor Code section 1771.4 and subject to the requirements of Title 8 of the California Code of Regulations. The successful Bidder shall comply with all requirements of Division 2, Part 7, Chapter 1, Articles 1-5 of the Labor Code.
16. This Project is funded in whole or in part with federal funds, and therefore the Contractor shall comply with the Davis-Bacon Act, applicable reporting requirements, and any other applicable requirements for federal funding. This Project is also subject to Buy American requirements.
17. The District shall award the Contract, if it awards it at all, to the lowest responsive responsible bidder based on:
 - A. The base bid amount only.

18. The Board reserves the right to reject any and all bids and/or waive any irregularity in any bid received. If the District awards the Contract, the security of unsuccessful bidder(s) shall be returned within sixty (60) days from the time the award is made. Unless otherwise required by law, no bidder may withdraw its bid for ninety (90) days after the date of the bid opening.

END OF DOCUMENT

INSTRUCTIONS TO BIDDERS

Bidders shall follow the instructions in this document, and shall submit all documents, forms, and information required for consideration of a bid.

Lodi Unified School District ("District") will evaluate information submitted by the apparent low Bidder and, if incomplete or unsatisfactory to District, Bidder's bid may be rejected at the sole discretion of District.

1. Bids are requested for a general construction contract, or work described in general, for the following project ("Project" or "Contract"):

Bear Creek High School Site Work Agriculture Complex, Bid Package 0819-8019-1

2. A Bidder and its subcontractors must possess the appropriate State of California contractors' license and must maintain the license throughout the duration of the project. Bidders must also be registered as a public works contractor with the Department of Industrial Relations pursuant to the Labor Code. Bids submitted by a contractor who is not properly licensed or registered shall be deemed nonresponsive and will not be considered.
3. District will receive sealed bids from bidders as stipulated in the Notice to Bidders.
 - a. All bids must be sealed in an envelope, marked with the name and address of the Bidder, name of the Project, the Project Number and/or bid number, and time of bid opening.
 - b. Bids must be submitted to the Facilities and Planning Department at 880 N. Guild Ave., Lodi, California 95240 by date and time shown in the Notice to Bidders.
 - c. Bids must contain all documents as required herein.
4. Bidders are advised that on the date that bids are opened, telephones will not be available at the District Offices for use by bidders or their representatives.
5. Bids will be opened at or after the time indicated for receipt of bids.
6. Bidders must submit bids on the documents titled Bid Form and Proposal, and must submit all other required District forms. Bids not submitted on the District's required forms shall be deemed nonresponsive and shall not be considered. Additional sheets required to fully respond to requested information are permissible.
7. Bidders shall not modify the Bid Form and Proposal or qualify their bids. Bidders shall not submit to the District a re-formatted, re-typed, altered, modified, or otherwise recreated version of the Bid Form and Proposal or other District-provided document.

8. Bids shall be clearly written and without erasure or deletions. District reserves the right to reject any bid containing erasures, deletions, or illegible contents.
9. Bidders must supply all information required by each Bid Document. Bids must be full and complete. District reserves the right in its sole discretion to reject any bid as nonresponsive as a result of any error or omission in the bid. Bidders must complete and submit all of the following documents with the Bid Form and Proposal:
 - a. Bid Bond on the District's form, or other security.
 - b. Designated Subcontractors List.
 - c. Site Visit Certification, if a site visit was required.
 - d. Non-Collusion Declaration.
 - e. Iran Contracting Act Certification, if contract value is \$1,000,000 or more.
 - f. ~~OCIP Insurance forms~~
10. Bidders must submit with their bids cash, a cashier's check or a certified check payable to District, or a bid bond by an admitted surety insurer of not less than ten percent (10%) of amount of Base Bid, plus all additive alternates ("Bid Bond"). If Bidder chooses to provide a Bid Bond as security, Bidder must use the required form of corporate surety provided by District. The Surety on Bidder's Bid Bond must be an insurer admitted in the State of California and authorized to issue surety bonds in the State of California. Bids submitted without necessary bid security will be deemed nonresponsive and will not be considered.
11. If Bidder to whom the Contract is awarded fails or neglects to enter into the Contract and submit required bonds, insurance certificates, and all other required documents, within **SEVEN (7)** calendar days after the date of the Notice of Award, District may deposit Bid Bond, cash, cashier's check, or certified check for collection, and proceeds thereof may be retained by District as liquidated damages for failure of Bidder to enter into Contract, in the sole discretion of District. It is agreed that calculation of damages District may suffer as a result of Bidder's failure to enter into the Contract would be extremely difficult and impractical to determine and that the amount of the Bidder's required bid security shall be the agreed and conclusively presumed amount of damages.
12. Bidders must submit with the bid the Designated Subcontractors List for those subcontractors who will perform any portion of Work, including labor, rendering of service, or specially fabricating and installing a portion of the Work or improvement according to detailed drawings contained in the plans and specifications, in excess of one half of one percent (0.5%) of total bid. Failure to submit this list when required by law shall result in bid being deemed nonresponsive and the bid will not be considered.
13. All of the listed subcontractors are required to be registered as a public works contractor with the Department of Industrial Relations pursuant to the Labor Code.
 - a. An inadvertent error in listing the California contractor license number on the Designated Subcontractors List shall not be grounds for filing a bid protest or

grounds for considering the bid nonresponsive if the correct contractor's license number is submitted to the District within 24 hours after the bid opening and the corrected number corresponds with the submitted name and location for that subcontractor.

- b. An inadvertent error listing an unregistered subcontractor shall not be grounds for filing a bid protest or grounds for considering the bid nonresponsive provided that any of the following apply:
 - (1) The subcontractor is registered prior to the bid opening.
 - (2) The subcontractor is registered and has paid the penalty registration fee within 24 hours after the bid opening.
 - (3) The subcontractor is replaced by another registered subcontractor pursuant to Public Contract Code section 4107.
- 14. If a mandatory pre-bid conference and site visit ("Site Visit") is required as referenced in the Notice to Bidders, then Bidders must submit the Site Visit Certification with their Bid. District will transmit to all prospective Bidders of record such Addenda as District in its discretion considers necessary in response to questions arising at the Site Visit. Oral statements shall not be relied upon and will not be binding or legally effective. Addenda issued by the District as a result of the Site Visit, if any, shall constitute the sole and exclusive record and statement of the results of the Site Visit.
- 15. Bidders shall submit the Non-Collusion Declaration with their bids. Bids submitted without the Non-Collusion Declaration shall be deemed nonresponsive and will not be considered.
- 16. The Contractor and all Subcontractors under the Contractor shall pay all workers on all work performed pursuant to the Contract not less than the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work as determined by the Director of the Department of Industrial Relations, State of California, for the type of work performed and the locality in which the work is to be performed within the boundaries of the District, pursuant to sections 1770 et seq. of the California Labor Code. Copies of the general prevailing rates of per diem wages for each craft, classification, or type of worker needed to execute the Contract, as determined by Director of the Department of Industrial Relations, are available upon request at the District's principal office. Prevailing wage rates are also available on the internet at <http://www.dir.ca.gov>.
- 17. Section 17076.11 of the Education Code requires school districts using funds allocated pursuant to the State of California School Facility Program for the construction and/or modernization of school building(s) to have a participation goal for disabled veteran business enterprises ("DVBE") of at least three percent (3%) per year of the overall dollar amount expended on projects that receive state funding or demonstrate its good faith effort to solicit DVBE participation in this Contract. In order to meet this requirement by demonstrating a good faith effort, Bidder must advertise for DVBE-certified subcontractors and suppliers before submitting its Bid. For any project that is at least partially state-funded, the lowest responsive responsible Bidder awarded the Contract must submit certification of compliance with the procedures for implementation of DVBE contracting goals with its signed

Agreement. DVBE Certification form is attached. Do not submit this form with your Bid.

18. Submission of bid signifies careful examination of Contract Documents and complete understanding of the nature, extent, and location of Work to be performed. Bidders must complete the tasks listed below as a condition to bidding, and submission of a bid shall constitute the Bidder's express representation to District that Bidder has fully completed the following:
- a. Bidder has visited the Site, if required, and has examined thoroughly and understood the nature and extent of the Contract Documents, Work, Site, locality, actual conditions, as-built conditions, and all local conditions and federal, state and local laws, and regulations that in any manner may affect cost, progress, performance, or furnishing of Work or that relate to any aspect of the means, methods, techniques, sequences, or procedures of construction to be employed by Bidder and safety precautions and programs incident thereto;
 - b. Bidder has conducted or obtained and has understood all examinations, investigations, explorations, tests, reports, and studies that pertain to the subsurface conditions, as-built conditions, underground facilities, and all other physical conditions at or contiguous to the Site or otherwise that may affect the cost, progress, performance, or furnishing of Work, as Bidder considers necessary for the performance or furnishing of Work at the Contract Sum, within the Contract Time, and in accordance with the other terms and conditions of Contract Documents, including specifically the provisions of the General Conditions; and no additional examinations, investigations, explorations, tests, reports, studies, or similar information or data are or will be required by Bidder for such purposes;
 - c. Bidder has correlated its knowledge and the results of all such observations, examinations, investigations, explorations, tests, reports, and studies with the terms and conditions of the Contract Documents;
 - d. Bidder has given the District prompt written notice of all conflicts, errors, ambiguities, or discrepancies that it has discovered in or among the Contract Documents and the actual conditions, and the written resolution(s) thereof by the District is/are acceptable to Bidder;
 - e. Bidder has made a complete disclosure in writing to the District of all facts bearing upon any possible interest, direct or indirect, that Bidder believes any representative of the District or other officer or employee of the District presently has or will have in this Contract or in the performance thereof or in any portion of the profits thereof;
 - f. Bidder must, prior to bidding, perform the work, investigations, research, and analysis required by this document and that Bidder represented in its Bid Form and Proposal and the Agreement that it performed prior to bidding. Contractor under this Contract is charged with all information and knowledge that a reasonable bidder would ascertain from having performed this required work, investigation, research, and analysis. Bid prices must include entire cost of all work "incidental" to completion of the Work.

- g. Conditions Shown on the Contract Documents: Information as to underground conditions, as-built conditions, or other conditions or obstructions, indicated in the Contract Documents, e.g., on Drawings or in Specifications, has been obtained with reasonable care, and has been recorded in good faith. However, District only warrants, and Bidder may only rely, on the accuracy of limited types of information.
- (1) As to above-ground conditions or as-built conditions shown or indicated in the Contract Documents, there is no warranty, express or implied, or any representation express or implied, that such information is correctly shown or indicated. This information is verifiable by independent investigation and Bidder is required to make such verification as a condition to bidding. In submitting its Bid, Bidder shall rely on the results of its own independent investigation. In submitting its Bid, Bidder shall not rely on District-supplied information regarding above-ground conditions or as-built conditions.
 - (2) As to any subsurface condition shown or indicated in the Contract Documents, Bidder may rely only upon the general accuracy of actual reported depths, actual reported character of materials, actual reported soil types, actual reported water conditions, or actual obstructions shown or indicated. District is not responsible for the completeness of such information for bidding or construction; nor is District responsible in any way for any conclusions or opinions that the Bidder has drawn from such information; nor is the District responsible for subsurface conditions that are not specifically shown (for example, District is not responsible for soil conditions in areas contiguous to areas where a subsurface condition is shown).
- h. Conditions Shown in Reports and Drawings Supplied for Informational Purposes: Reference is made to the document entitled Geotechnical Data, and the document entitled Existing Conditions, for identification of:
- (1) Subsurface Conditions: Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that have been utilized by Architect in preparing the Contract Documents; and
 - (2) Physical Conditions: Those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that has been utilized by Architect in preparing the Contract Documents.
 - (3) These reports and drawings are **not** Contract Documents and, except for any "technical" data regarding subsurface conditions specifically identified in Geotechnical Data and Existing Conditions, and underground facilities data, Bidder may not in any manner rely on the information in these reports and drawings. Subject to the foregoing, Bidder must make its own independent investigation of all conditions affecting the Work and must not rely on information provided by District.
19. Bids shall be based on products and systems specified in Contract Documents or listed by name in Addenda. Whenever in the Specifications any materials, process,

or article is indicated or specified by grade, patent, or proprietary name, or by name of manufacturer, that Specification shall be deemed to be followed by the words "or equal." Bidder may, unless otherwise stated, offer any material, process, or article that shall be substantially equal or better in every respect to that so indicated or specified. The District is not responsible and/or liable in any way for a Contractor's damages and/or claims related, in any way, to that Contractor's basing its bid on any requested substitution that the District has not approved in advance and in writing. Contractors and materials suppliers who submit requests for substitutions prior to the award of the Contract must do so in writing and in compliance with Public Contract Code section 3400. All requests must comply with the following:

- a. District must receive any notice of request for substitution of a specified item a minimum of **TEN (10)** calendar days prior to bid opening. The Successful Bidder will not be allowed to substitute specified items unless properly noticed.
 - b. Within 35 days after the date of the Notice of Award, the Successful Bidder shall submit data substantiating the request(s) for all substitution(s) containing sufficient information to assess acceptability of product or system and impact on Project, including, without limitation, the requirements specified in the Special Conditions and the Specifications. Insufficient information shall be grounds for rejection of substitution.
 - c. Approved substitutions, if any, shall be listed in Addenda. District reserves the right not to act upon submittals of substitutions until after bid opening.
 - d. Substitutions may be requested after Contract has been awarded only if indicated in and in accordance with requirements specified in the Special Conditions and the Specifications.
20. Bidders may examine any available "as-built" drawings of previous work by giving District reasonable advance notice. District will not be responsible for accuracy of "as-built" drawings. The document entitled Existing Conditions applies to all supplied "as-built" drawings.
21. All questions about the meaning or intent of the Contract Documents are to be directed via email to the District to Ryan Lancaster (rlancaster@lodiUSD.net). Interpretations or clarifications considered necessary by the District in response to such questions will be issued in writing by Addenda and emailed, faxed, mailed, or delivered to all parties recorded by the District as having received the Contract Documents or posted on the District's website at **<https://www.lodiUSD.net/about/bonds#facilities>**. Questions received less than **SEVEN (7)** calendar days prior to the date for opening bids may not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
22. Addenda may also be issued to modify other parts of the Contract Documents as deemed advisable by the District.
23. Each Bidder must acknowledge each Addendum in its Bid Form and Proposal by number or its Bid shall be considered non-responsive. Each Addendum shall be part of the Contract Documents. A complete listing of Addenda may be secured from the District.

24. This Contract may include alternates. Alternates are defined as alternate products, materials, equipment, systems, methods, or major elements of the construction that may, at the District's option and under terms established in the Contract and pursuant to section 20103.8 of the Public Contract Code, be selected for the Work.
25. The District shall award the Contract, if it awards it at all, to the lowest responsive responsible bidder based on the criteria as indicated in the Notice to Bidders. In the event two or more responsible bidders submit identical bids, the District shall select the Bidder to whom to award the Contract by lot.
26. Discrepancies between written words and figures, or words and numerals, will be resolved in favor of figures or numerals.
27. Bidders in contention for contract awards shall be required to attend a Post-Bid interview, which will be set within three (3) calendar days following bid opening. A duly authorized representative of the apparent low bidder is required to attend the Post Bid Interview, in person. The apparent low bidder's authorized representative(s) must have (1) knowledge of how the bid submitted was prepared, (2) the person responsible for supervising performance of the Work, and (3) the authority to bind the apparent low bidder. Failure to attend the Post Bid Interview as scheduled will be considered just cause for the District to reject the Bid as nonresponsive.
28. Any bid protest by any Bidder regarding any other bid must be submitted in writing to the District, before 5:00 p.m. of the **THIRD (3rd)** business day following bid opening.
 - a. Only a Bidder who has actually submitted a bid, and who could be awarded the Contract if the bid protest is upheld, is eligible to submit a bid protest. Subcontractors are not eligible to submit bid protests. A Bidder may not rely on the bid protest submitted by another Bidder.
 - b. A bid protest must contain a complete statement of any and all bases for the protest and all supporting documentation. Materials submitted after the bid protest deadline will not be considered.
 - c. The protest must refer to the specific portions of all documents that form the basis for the protest.
 - (1) Without limitation to any other basis for protest, an inadvertent error in listing the California contractor's license number on the Designated Subcontractors List shall not be grounds for filing a bid protest or grounds for considering the bid nonresponsive if the correct contractor's license number is submitted to the District within 24 hours after the bid opening and the corrected number corresponds with the submitted name and location for that subcontractor.
 - (2) Without limitation to any other basis for protest, an inadvertent error listing an unregistered subcontractor shall not be grounds for filing a bid protest or grounds for considering the bid nonresponsive provided that any of the following apply:
 - (i) The subcontractor is registered prior to the bid opening.

- (ii) The subcontractor is registered and has paid the penalty registration fee within 24 hours after the bid opening.
 - (iii) The subcontractor is replaced by another registered subcontractor pursuant to Public Contract Code section 4107.
 - d. The protest must include the name, address and telephone number of the person representing the protesting party.
 - e. The party filing the protest must concurrently transmit a copy of the protest and any attached documentation to all other parties with a direct financial interest that may be adversely affected by the outcome of the protest. Such parties shall include all other bidders or proposers who appear to have a reasonable prospect of receiving an award depending upon the outcome of the protest.
 - f. The procedure and time limits set forth in this paragraph are mandatory and are each bidder's sole and exclusive remedy in the event of bid protest. Failure to comply with these procedures shall constitute a waiver of any right to further pursue the bid protest, including filing a Government Code Claim or legal proceedings.
29. The Bidder to whom Contract is awarded shall execute and submit the following documents by 5:00 p.m. of the **SEVENTH (7th)** calendar day following the date of the Notice of Award. Failure to properly and timely submit these documents entitles District to reject the bid as nonresponsive.
- a. Agreement: To be executed by successful Bidder. Submit four (4) copies, each bearing an original signature.
 - b. Escrow of Bid Documentation: This must include all required documentation. See the document titled Escrow Bid Documentation for more information.
 - c. Performance Bond (100%): On the form provided in the Contract Documents and fully executed as indicated on the form.
 - d. Payment Bond (Contractor's Labor and Material Bond) (100%): On the form provided in the Contract Documents and fully executed as indicated on the form.
 - e. Insurance Certificates and Endorsements as required.
 - f. Workers' Compensation Certification.
 - g. Prevailing Wage and Related Labor Requirements Certification.
 - h. Disabled Veteran Business Enterprise Participation Certification.
 - i. Drug-Free Workplace Certification.
 - j. Tobacco-Free Environment Certification.

- k. Criminal Background Investigation/Fingerprinting Certification.
 - l. Buy American Certification.
 - m. Registered Subcontractors List: Must include Department of Industrial Relations (DIR) registration number of each subcontractor for all tiers.
30. Time for Completion: District may issue a Notice to Proceed within **NINETY (90)** days from the date of the Notice of Award. Once Contractor has received the Notice to Proceed, Contractor shall complete the Work within the period of time indicated in the Contract Documents.
- a. In the event that the District desires to postpone issuing the Notice to Proceed beyond this 90-day period, it is expressly understood that with reasonable notice to the Contractor, the District may postpone issuing the Notice to Proceed.
 - b. 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 issuance of the Notice to Proceed beyond a 90-day period. If the Contractor believes that a postponement of issuance of the Notice to Proceed will cause a hardship to the Contractor, the Contractor may terminate the Contract. Contractor's termination due to a postponement beyond this 90-day period shall be by written notice to District within **TEN (10)** calendar days after receipt by Contractor of District's notice of postponement.
 - c. It is further understood by the 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 which the District had in writing authorized Contractor to perform prior to issuing a Notice to Proceed.
 - d. Should the Contractor terminate the Contract as a result of a notice of postponement, District shall have the authority to award the Contract to the next lowest responsive responsible bidder.
31. District reserves the right to reject any or all bids, including without limitation the right to reject any or all nonconforming, nonresponsive, unbalanced, or conditional bids, to re-bid, and to reject the bid of any bidder if District believes that it would not be in the best interest of the District to make an award to that bidder, whether because the bid is not responsive or the bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by District. District also reserves the right to waive any inconsequential deviations or irregularities in any bid. For purposes of this paragraph, an "unbalanced bid" is one having nominal prices for some work items and/or enhanced prices for other work items.
32. It is the policy of the District that no qualified person shall be excluded from participating in, be denied the benefits of, or otherwise be subjected to discrimination in any consideration leading to the award of contract, based on race, color, gender, sexual orientation, political affiliation, age, ancestry, religion, marital

status, national origin, medical condition or disability. The Successful Bidder and its subcontractors shall comply with applicable federal and state laws, including, but not limited to the California Fair Employment and Housing Act, beginning with Government Code section 12900, and Labor Code section 1735.

33. Prior to the award of Contract, District reserves the right to consider the responsibility of the Bidder. District may conduct investigations as District deems necessary to assist in the evaluation of any bid and to establish the responsibility, including, without limitation, qualifications and financial ability of Bidders, proposed subcontractors, suppliers, and other persons and organizations to perform and furnish the Work in accordance with the Contract Documents to District's satisfaction within the prescribed time.

END OF DOCUMENT

BIDDER INFORMATION AND FORMS

Pursuant to Public Contract Code §20111.6, effective January 1, 2014, school districts are required to conduct a prequalification process for General Contractors, and Mechanical, Electrical and Plumbing Subcontractors for projects over \$1,000,000. Only those contractors who submitted a prequalification application and were notified that they qualified may submit bids on this project. Prequalification can be completed on the PQBids website using <https://pqbids.com/lodi/>. The District must receive applications at least ten (10) business days prior to the scheduled proposal submission deadline on this advertised project.

END OF DOCUMENT

EXISTING CONDITIONS

1.□ Summary

This document describes existing conditions at or near the Project, and use of information available regarding existing conditions. This document is **not** part of the Contract Documents. See General Conditions for definition(s) of terms used herein.

2.□ Reports and Information on Existing Conditions

- a. Documents providing a general description of the Site and conditions of the Work may have been collected by the Lodi Unified School District ("District"), its consultants, contractors, and tenants. These documents may, but are not required to, include previous contracts, contract specifications, tenant improvement contracts, as-built drawings, utility drawings, and information regarding underground facilities.
- b. Information regarding existing conditions may be inspected at the District offices or the Construction Manager's offices, if any, and copies may be obtained at cost of reproduction and handling upon Bidder's agreement to pay for such copies. These reports, documents, and other information are **not** part of the Contract Documents. These reports, documents, and other information do **not** excuse Contractor from fulfilling Contractor's obligation to independently investigate any or all existing conditions or from using reasonable prudent measures to avoid damaging existing improvements.
- c. Information regarding existing conditions may also be included in the Project Manual, but shall **not** be considered part of the Contract Documents.
- d. Prior to commencing this Work, Contractor and the District's representative shall survey the Site to document the condition of the Site. Contractor will record the survey in digital videotape format and provide an electronic copy to the District within fourteen (14) days of the survey.
- e. Contractor may also document any pre-existing conditions in writing, provided that both the Contractor and the District's representative agree on said conditions and sign a memorandum documenting the same.
- f. The reports and other data or information regarding existing conditions and underground facilities at or contiguous to the Project are the following:
 - (1) Original Construction Drawings.
 - (2) Survey of Site.
 - (3) Geotechnical Report(s).
 - (4) Hazardous Material Report(s).

3.□ Use of Information

- a. Information regarding existing conditions was obtained only for use of District and its consultants, contractors, and tenants for planning and design and is **not** part of the Contract Documents.
- b. District does not warrant, and makes no representation regarding, the accuracy or thoroughness of any information regarding existing conditions. Bidder represents and agrees that in submitting a bid it is not relying on any information regarding existing conditions supplied by District.
- c. Under no circumstances shall District be deemed to warrant or represent existing above-ground conditions, as-built conditions, or other actual conditions, verifiable by independent investigation. These conditions are verifiable by Bidder by the performance of its own independent investigation that Bidder must perform as a condition to bidding and Bidder should not and shall not rely on this information or any other information supplied by District regarding existing conditions.
- d. Any information shown or indicated in the reports and other data supplied herein with respect to existing underground facilities at or contiguous to the Project may be based upon information and data furnished to District by the District's employees and/or consultants or builders of such underground facilities or others. District does not assume responsibility for the completeness of this information, and Bidder is solely responsible for any interpretation or conclusion drawn from this information.
- e. District shall be responsible only for the general accuracy of information regarding underground facilities, and only for those underground facilities that are owned by District, and only where Bidder has conducted the independent investigation required of it pursuant to the Instructions to Bidders, and discrepancies are not apparent.

4.□ Investigations/Site Examinations

- a. Before submitting a bid, each Bidder is responsible for conducting or obtaining any additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and underground facilities) at or contiguous to the Site or otherwise, that may affect cost, progress, performance, or furnishing of Work or that relate to any aspect of the means, methods, techniques, sequences, or procedures of construction to be employed by Bidder and safety precautions and programs incident thereto or that Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price, and other terms and conditions of Contract Documents.
- b. On request, District will provide each Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies, as each Bidder deems necessary for submission of a bid. Bidders must fill all holes and clean up and restore the Site to its former condition upon completion of its explorations, investigations, tests, and studies. Such investigations and Site examinations may be performed during any and all Site visits indicated in the Notice to Bidders and only under the provisions of the Contract

Documents, including, but not limited to, proof of insurance and obligation to indemnify against claims arising from such work, and District's prior approval.

END OF DOCUMENT

GEOTECHNICAL DATA

1.□ Summary

This document describes geotechnical data at or near the Project that is in the District's possession available for Contractor's review, and use of data resulting from various investigations. This document is **not** part of the Contract Documents. See General Conditions for definition(s) of terms used herein.

2.□ Geotechnical Reports

- a. Geotechnical reports may have been prepared for and around the Site and/or in connection with the Work by soil investigation engineers hired by Lodi Unified School District ("District"), and its consultants, contractors, and tenants.
- b. Geotechnical reports may be inspected at the District offices or the Construction Manager's offices, if any, and copies may be obtained at cost of reproduction and handling upon Bidder's agreement to pay for such copies. These reports are **not** part of the Contract Documents.
- c. The reports and drawings of physical conditions that may relate to the Project are the following:

Bear Creek High School Agricultural Science Building Geotechnical Report 6-15-2023

3.□ Use of Data

- a. Geotechnical data were obtained only for use of District and its consultants, contractors, and tenants for planning and design and are **not** a part of Contract Documents.
- b. Except as expressly set forth below, District does not warrant, and makes no representation regarding, the accuracy or thoroughness of any geotechnical data. Bidder represents and agrees that in submitting a bid it is not relying on any geotechnical data supplied by District, except as specifically allowed below.
- c. Under no circumstances shall District be deemed to make a warranty or representation of existing above ground conditions, as-built conditions, geotechnical conditions, or other actual conditions verifiable by independent investigation. These conditions are verifiable by Bidder by the performance of its own independent investigation that Bidder should perform as a condition to bidding and Bidder must not and shall not rely on information supplied by District.

4.□ Limited Reliance Permitted on Certain Information

- a. Reference is made herein for identification of:

Reports of explorations and tests of subsurface conditions at or contiguous to the Site that have been utilized by District in preparation of the Contract Documents.

Drawings of physical conditions in or relating to existing subsurface structures (except underground facilities) that are at or contiguous to the Site and have been utilized by District in preparation of the Contract Documents.

- b. Bidder may rely upon the general accuracy of the "technical data" contained in the reports and drawings identified above, but only insofar as it relates to subsurface conditions, provided Bidder has conducted the independent investigation required pursuant to Instructions to Bidders, and discrepancies are not apparent. The term "technical data" in the referenced reports and drawings shall be limited as follows:
- (1) The term "technical data" shall include actual reported depths, reported quantities, reported soil types, reported soil conditions, and reported material, equipment or structures that were encountered during subsurface exploration. The term "technical data" does not include, and Bidder may not rely upon, any other data, interpretations, opinions or information shown or indicated in such drawings or reports that otherwise relate to subsurface conditions or described structures.
 - (2) The term "technical data" shall not include the location of underground facilities.
 - (3) Bidder may not rely on the completeness of reports and drawings for the purposes of bidding or construction. Bidder may rely upon the general accuracy of the "technical data" contained in such reports or drawings.
 - (4) Bidder is solely responsible for any interpretation or conclusion drawn from any "technical data" or any other data, interpretations, opinions, or information provided in the identified reports and drawings.

5.□ Investigations/Site Examinations

- a. Before submitting a bid, each Bidder is responsible for conducting or obtaining any additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and underground facilities) at or contiguous to the Site or otherwise, that may affect cost, progress, performance, or furnishing of Work or that relate to any aspect of the means, methods, techniques, sequences, or procedures of construction to be employed by Bidder and safety precautions and programs incident thereto or that Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price, and other terms and conditions of Contract Documents.
- b. On request, District will provide each Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies, as each

Bidder deems necessary for submission of a bid. Bidders must fill all holes and clean up and restore the Site to its former condition upon completion of its explorations, investigations, tests, and studies. Such investigations and Site examinations may be performed during any and all Site visits indicated in the Notice to Bidders and only under the provisions of the Contract Documents, including, but not limited to, proof of insurance and obligation to indemnify against claims arising from such work, and District's prior approval.

END OF DOCUMENT



Geotechnical Engineering Report
BEAR CREEK HIGH SCHOOL AGRICULTURAL SCIENCE BUILDING
Stockton, California

Prepared for:

Lodi Unified School District
1305 East Vine Street
Lodi, California 95240

Prepared by:

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3410 West Hammer Lane, Suite F
Stockton, California 95219

Date: June 15, 2023

UES Project No. 4730.2300012.0016



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FIGURES

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APPENDIX A – General Project Information, Field and Laboratory Test Results

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Resistance Value Test Results	Figure A3
Corrosion Test Results	Figure A4

1.0 INTRODUCTION

We have completed a geotechnical engineering study for the proposed agricultural science building to be constructed at the existing Bear Creek High School campus at 10555 Thornton Road in Stockton, California. The purposes of our work have been to explore the existing site, soil and groundwater conditions, and to provide geotechnical engineering conclusions and recommendations for the design and construction of the proposed construction and associated improvements.

1.1 Scope of Services

Our scope of services included the following tasks:

1. a site reconnaissance;
2. review of United States Geological Survey (USGS) topographic map, historical aerial photographs, and available groundwater information relevant to the site;
3. subsurface exploration, including the drilling and sampling of four soil borings to depths ranging from 6½ to 16½-feet below existing site grades;
4. laboratory testing of selected soil samples;
5. engineering analyses; and,
6. preparation of this report.

1.2 Project Description

We understand the project will consist of the design and construction of a new agricultural science building. The new building will cover a total building area of approximately 3,700 square feet. Associated development will consist of asphalt concrete pavements, concrete sidewalks, and underground utilities.

1.3 Figures and Attachments

This report contains a Vicinity Map as Figure 1, a Site Plan showing the approximate boring locations as Figure 2, and the Logs of Soil Boring as Figures 3 through 6. An explanation of the symbols and classification system used on the logs is contained in Figure 7. Appendix A contains information of a general nature regarding project concepts, exploratory methods used during the field exploration phase of our investigation, and laboratory test results.

2.0 FINDINGS

2.1 Site Description

The property encompasses a portion of the western end of Bear Creek High School in Stockton, California (Figure 1). The site is bounded to the north, east, and south by facilities of the school campus and to the west by a grass-covered play field.

At the time of our field explorations on May 10, 2023 the site was vacant and covered in a light growth of grass. Some relatively mature trees and utility covers were observed on the eastern end of the site.

Topography across the site was relatively flat with surface elevations of approximately +12 feet in reference to the North American Vertical Datum of 1988 (NAVD88), based on the United States Geologic Survey (USGS) data shown on the *7.5-Minute Series Lodi South Quadrangle, California* topographic map, dated 2021.

2.2 Historical Aerial Photograph Review

We reviewed historical aerial photographs of the site from Google Earth Pro and the website HistoricalAerials.com. Photographs were available from the years 1947 through 2023. Our historical aerial review indicates the site has been used for agricultural purposes since at least 1957. Photographs taken between 1984 and 1993 revealed the construction of the school campus. A photograph of 1998 shows the site is being occupied by a baseball diamond. The baseball diamond is no longer visible in a photograph from 2008. The 2008 photograph shows the baseball diamond has been removed and the site is under construction. A 2009 photograph shows the site is not used as a soccer field. The soccer field is visible in aerial photographs through 2022. In 2022, the north end of the soccer field is covered in what appears to be gravel and concrete pavements and three structures are located at the site, just north of the proposed agricultural building. The site has remained essentially unchanged from 2022 until the time of our field exploration in May of 2023.

2.3 Soil Conditions

On May 10, 2023, four soil borings (D1 through D4) were performed at the approximate locations indicated on Figure 2 to depths between 6½ to 16½ feet below existing ground surface (bgs).

The near-surface soil conditions encountered at the boring locations generally consists of dark brown, lean clay or brown, silty sand ranging from 2½ to 6½ feet bgs. Beneath the sand and clay were brown silty sand or sandy silt to the explored depth 16½ feet bgs.

For detailed soil conditions at a particular location, please refer to the Logs of Soil Borings presented in Figures 3 through 6.

2.4 Groundwater

Groundwater was not encountered within the borings performed on May 10, 2023, to the explored depths of about 6½ 16½-feet bgs.

To supplement our study, we reviewed available groundwater elevation data obtained from a California Department of Water Resources (DWR) monitoring well as identified as State Well Number 02N06E06C002M, located about ½-mile northwest of the site. The ground surface elevation at the well is +9 NAVD88, which is about three feet lower than the site. Groundwater measurements obtained from the well indicate a “high” groundwater elevation of -9 feet NAVD88 (about 18 feet bgs at the well) occurred on October 29, 2006, and a “low” groundwater elevation of approximately -23 feet (about 23 feet below bgs at the well) occurred on October 27, 2008.

Based on our observations, review of historical data, and experience in the area, we anticipate permanent groundwater will be encountered as high as about 20 feet below the existing ground surface.

3.0 CONCLUSIONS

3.1 2022 CBC and ASCE 7-16 Seismic Design Parameters

The 2022 *California Building Code* (CBC) references the American Society of Civil Engineers (ASCE) Standard 7-16 for seismic design. Based on the soil conditions encountered at the exploration locations and our experience in the local area, in our opinion the site can be designated as Site Class D in determining seismic design forces for this project.

The seismic design parameters provided in Table 1 were based on the latitude and longitude for the central portion of the site using the web interface developed by the *Structural Engineers Association of California* (SEAOC) and *California Department of Health Care Access and Information* (HCAi). Since S_1 is greater than 0.2 g, the coefficient values F_v , S_{M1} , and S_{D1} presented in Table 1 are valid for this project, provided the requirements in Exception Note No. 2 of Section 11.4.8 of ASCE 7-16 apply. Based on our experience with similar projects, we anticipate the proposed improvements will meet the exception. However, the project structural engineer should verify the exception is met.

Table 1: ASCE 7-16 Seismic Design Parameters

Latitude: 38.05118° N Longitude: 121.3553° W	ASCE 7-16 Table/Figure	2022 CBC Table/Figure	Factor/Coefficient	Value
Short-Period MCE_R at 0.2 second	Figure 22-1	Figure 1613.2.1(1) & 1613.2.1(2)	S_S	0.724 g
1.0 second Period MCE_R	Figure 22-2	Figure 1613.2.1(3) & 1613.2.1(4)	S_1	0.285 g
Soil Class	Table 20.3-1	Section 1613.2.2	Site Class	D
Site Coefficient	Table 11.4-1	Table 1613.2.3(1)	F_a	1.221
Site Coefficient	Table 11.4-2	Table 1613.2.3(2)	F_v	2.030*
Adjusted MCE Spectral Response Parameters	Equation 11.4-1	Equation 16-20	S_{MS}	0.884 g
	Equation 11.4-2	Equation 16-21	S_{M1}	0.579 g*
Design Spectral Acceleration Parameters	Equation 11.4-3	Equation 16-22	S_{DS}	0.589 g
	Equation 11.4-4	Equation 16-23	S_{D1}	0.386 g*
Seismic Design Category	Table 11.6-1	Section 1613.2.5(1)	Risk Category I – IV	D
	Table 11.6-2	Section 1613.2.5(2)	Risk Category I - IV	D

Notes: MCE = Maximum Considered Earthquake; g = gravity

* The value is valid provided the requirements in Exception Note No. 2 in Section 11.4.8 of ASCE 7-16 are met. If not, a site-specific ground motion hazard analysis is required.

3.2 Liquefaction Potential

Based upon the results of our subsurface exploration, the known site geologic, seismologic, groundwater and soil conditions, it is our opinion that the potential for liquefaction occurring at this site is relatively low.

3.3 Soil Expansion Potential

Laboratory testing of soils collected at the boring locations revealed the near-surface soil possesses “low” expansion potential when testing in accordance with the ASTM International D4829 test method (Figures A1 and A2).

Based on the laboratory test results and soil conditions encountered at the boring locations, specific recommendations to mitigate the effects of expansive soils will not be required for development of this site.

3.4 Bearing Capacity

Based upon our field and laboratory testing, it is our opinion the native soils are capable of supporting the planned structures provided the recommendations in this report are followed. Our work also indicates engineered fills composed of native soils or approved imported soils constructed in accordance with our recommendations also will be capable of supporting the planned improvements.

3.5 Excavation Conditions

The surface and near-surface soils at the site should be readily excavatable with conventional earthmoving and trenching equipment. Based on the explorations performed at the site, excavations associated with building foundations, shallow trenches for utilities, and other excavations less than five feet deep associated with the planned construction, should stand vertically for short periods of time (i.e., less than one to two days) required for construction. However saturated, cohesionless, or disturbed soils, if encountered may result in caving or sloughing; therefore, the contractor should be prepared to brace or shore the excavations, if necessary.

Excavations or trenches exceeding five feet in depth that will be entered by workers should be sloped, braced or shored to conform to current California Occupational Safety and Health Administration (Cal/OSHA) requirements. The contractor must provide an adequately constructed and braced shoring system in accordance with federal, state, and local safety regulations for individuals working in an excavation that may expose them to the danger of moving ground.

Temporarily sloped excavations less than 15 feet in depth should be constructed no steeper than two horizontal to one vertical (2H:1V) inclination. Temporary slopes likely will stand at this inclination for the short-term duration of construction, provided significant pockets of loose and/or saturated granular soils are not encountered. Flatter slopes would be required if these conditions are encountered.

Excavated materials should not be stockpiled directly adjacent to an open excavation to prevent surcharge loading of the excavation sidewalls. Excessive truck and equipment traffic should be avoided near excavations. If material is stored or heavy equipment is stationed and/or operated near an excavation, a shoring system must be designed to resist the additional pressure due to the superimposed loads.

3.6 Material Suitability for Engineered Fill Construction

The existing on-site native soils encountered at the boring locations are considered suitable for use as engineered fill construction, provided these materials do not contain significant quantities of organics,

rubble and deleterious debris, and are at a proper moisture content capable of achieving the desired degree of compaction. Imported materials, if necessary, should be granular and approved by our office prior to importing the materials to the site.

3.7 Pavement Subgrade Quality

Laboratory test results indicate the near-surface soils are relatively poor to moderate quality materials for support of asphalt concrete pavements. Laboratory tests indicate that the near-surface soils possess Resistance (“R”) values of 12 and 20 when tested in accordance with California Test 301. The results of the R-value tests are presented in Figure A3. Based on the results, an R-Value of 10 was used in our pavement design.

3.8 Preliminary Soil Corrosion Potential

One sample of near-surface soil was submitted to Sunland Analytical of Rancho Cordova, California, for testing to determine pH, chloride and sulfate concentrations, and minimum resistivity to help evaluate the potential for corrosive attack upon buried concrete. The results of the corrosivity testing are summarized below in Table 2. Copies of the test reports are presented in Figure A4.

Table 2: Soil Corrosivity Testing

Analyte	Test Method	Sample Identification
		D1 (0-3')
pH	CA DOT 643 Modified*	7.68
Minimum Resistivity	CA DOT 643 Modified*	2,010 Ω -cm
Chloride	CA DOT 422m	2.7 ppm
Sulfate	CA DOT 417	13.4 ppm

Notes: * = Small cell method; Ω -cm = Ohm-centimeters; ppm = Parts per million

The California Department of Transportation Corrosion and Structural Concrete Field Investigation Branch, Corrosion Guidelines (Version 3.2, dated May 2021), considers a site to be corrosive to foundation elements if one or more of the following conditions exists for the representative soil and/or water samples taken: has a chloride concentration greater than or equal to 500 ppm, sulfate concentration greater than or equal to 1500 ppm, or the pH is 5.5 or less. Based on this criterion, the on-site soils tested are not considered corrosive to steel reinforcement properly embedded within Portland cement concrete (PCC).

Table 19.3.1.1 – Exposure Categories and Classes, of American Concrete Institute (ACI) 318-19, Section 19.3 – Concrete Durability Requirements, as referenced in Section 1904.1 of the 2022 CBC, indicates the severity of sulfate exposure for the sample tested is Exposure Class S0 (water-soluble sulfate concentration in contact with concrete is low and injurious sulfate attack is not a concern). The project Structural Engineer should evaluate the requirements of ACI 318-19 and determine their applicability to the site.

UES are not corrosion engineers. Therefore, if it is desired to further define the soil corrosion potential at the site, a Corrosion Engineer should be consulted.

3.9 Groundwater Conditions and Seasonal Moisture

Based upon the absence of groundwater during our field exploration and published information regarding groundwater elevations in the vicinity, we conclude that a permanent groundwater level should not be a significant factor in the design or construction of foundation and/or utility excavations less than about 10 feet below the ground surface. However, saturation of near-surface soils maybe encountered from rainfall, surface run-off, irrigation, or seepage from perched groundwater sources. In general, standard sump pit and pumping procedures should be adequate to control localized seepage for shallow excavations, if encountered.

Grading operations attempted following the on-set of winter rains and prior to prolonged drying periods will be hampered by high soil moisture contents. Such soils, intended for use as engineered fill, will require considerable drying and aeration to reach a moisture content that will permit the specified degree of compaction to be achieved.

4.0 RECOMMENDATIONS

4.1 General

The recommendations presented below are appropriate for typical construction in the late spring through fall months. The on-site soils likely will be saturated by rainfall in the winter and early spring months and will not be compactable without drying by aeration or chemical treatment to dry the soils. Should the construction schedule require work during wet conditions, additional recommendations can be provided, as conditions dictate.

Site preparation should be accomplished in accordance with the provisions of this report. The Geotechnical Engineer's representative should be present during site grading to evaluate compliance with the above recommendations. The Geotechnical Engineer of Record referenced herein should be considered the Geotechnical Engineer that is retained to provide geotechnical engineering observation and testing services during construction.

4.2 Site Clearing

Initially, the site should be cleared of significant vegetation, debris, and other deleterious materials to expose undisturbed native soils. The deleterious material should be removed from the site. Following clearing operations, any remaining surface vegetation and organically contaminated topsoil should be removed by stripping. Strippings may be stockpiled for later use or disposed of off-site. Strippings should not be used in general fill construction, but may be used in non-structural areas, provided they are kept at least five feet from structural areas, moisture conditioned and compacted.

Discing of the organics into the surface soils may be a suitable alternate to stripping, depending on the condition and quantity of the organics at the time of grading. The decision to utilize discing in lieu of stripping should be made by the field representative of the Geotechnical Engineer at the time of earthwork construction. Discing operations, if approved, should be observed by the Geotechnical Engineer's representative and be continuous until the organics are adequately mixed into the surface soils to provide a compactable mixture of soil containing minor amounts of organic matter. Pockets or concentrations of organics will not be allowed.

Removal of trees, if any should include rootballs and roots larger than ½-inch in diameter. Adequate removal of debris and roots may require laborers and handpicking to clear the subgrade soils to the satisfaction of the Geotechnical Engineer's on-site representative.

Existing underground utilities within the proposed building pad should be completely removed and/or rerouted as necessary. Any existing underground utilities designated to be removed or relocated should include all trench backfill and be replaced with engineered fill. Utilities located outside the building areas should be properly abandoned (i.e., fully grouted provided the abandoned utility is situated at least 2½ feet below the final subgrade level to reduce the potential for localized "hard spots").

Depressions resulting from clearing operations, as well as any loose, saturated, or organically contaminated soils, if any, as identified by the Geotechnical Engineer's representative, should be cleaned out to expose firm, undisturbed soils and widened, as necessary, to allow access for construction equipment. Depressions should be backfilled with engineered fill in accordance with the recommendations in this report.

4.3 Subgrade Preparation

Following the site clearing operations, surfaces to receive fill and at-grade areas to receive improvements should be scarified to a depth of at least 12 inches, moisture conditioned to at least the optimum moisture content, and compacted to at least 90 percent relative compaction. Relative compaction should be based on the maximum dry density as determined in accordance with the American Society of Testing and Materials (ASTM) D1557 Test Method.

Compaction of soil subgrades should be achieved using compaction equipment capable of achieving the desired degree of compaction and must be performed in the presence of the Geotechnical Engineer's representative who will evaluate the performance of the subgrade under the compaction loads and identify loose or unstable soil conditions that could require excavation. Difficulty in achieving subgrade compaction or unusual soil instability may be indications of loose soils. Should these conditions exist, the materials should be excavated to check for possible subsurface structures and the excavations backfilled with engineered fill.

The upper 12 inches of final subgrade supporting the building pad should be compacted to at least 90 percent relative compaction.

Final pavement subgrade processing and compaction should be performed after completion of underground utilities. Pavement subgrades must be stable under construction traffic prior to placement of engineered fill. The upper six inches of pavement subgrade should be moisture conditioned to at least the optimum moisture content and compacted to at least 95 percent relative compaction regardless of whether final subgrade is achieved by excavation, filling or left at existing grade.

If loose, soft, or saturated soils are encountered during the subgrade preparation operations they should be properly remediated (i.e., scarified and compacted) or excavated to expose firm, undisturbed native materials. Any resulting excavations should be restored to grade with engineered fill meeting the requirements provided in the Engineered Fill Construction section of this report.

4.4 Engineered Fill Construction

On-site soils are suitable for engineered fill construction in structural areas provided the materials do not contain rubbish, rubble greater than three inches, and significant organic concentrations. Imported fill materials, if required, should be compactable, non-expansive granular soils, and contain no particles greater than three inches in maximum dimension. Imported soils should be approved by the Geotechnical Engineer prior to being transported to the site. Also, if import fills are required (other than aggregate base), the contractor must provide appropriate documentation that the import is clean of

known contamination per Department of Toxic Substances Control (DTSC) and within acceptable corrosion limits.

The fill comprised of native soils should be spread in level layers not exceeding eight inches in loose thickness with each lift being thoroughly moisture conditioned to at least the optimum moisture content and uniformly compacted to at least 90 percent relative compaction within building pad and exterior flatwork areas and a minimum of 95 percent of the maximum dry density within the upper six inches of the final pavement subgrade.

Subgrades for support of concrete slabs-on-grade and pavements should be protected from disturbance and/or desiccation until covered by capillary break material or aggregate base. Disturbed subgrade soils may require additional processing and recompaction, depending on the level of disturbance.

We recommend the Geotechnical Engineer's representative be present on a regular basis during all earthwork operations to observe and test the engineered fill and to verify compliance with the recommendations of this report and the project plans and specifications.

Permanent excavation and fill slopes should be constructed no steeper than two horizontal to one vertical (2:1) and should be vegetated as soon as practical following grading to minimize erosion. As a minimum, the following erosion control measures should be considered: placement of straw bale sediment barriers or construction of silt filter fences in areas where surface run-off may be concentrated. Slopes should be over-built and cutback to design grades and inclinations.

4.5 Foundation Design

The proposed agricultural science building may be supported upon conventional continuous and/or isolated spread foundations extending at least 18 inches below lowest adjacent soil grade. Lowest adjacent soil grade is defined as the grade upon which the capillary break material is placed or exterior soil grade, whichever is lower. All continuous foundations should maintain a minimum width of 12 inches; isolated spread foundations should also be at least 12 inches in plan dimension.

Foundations bearing on undisturbed native soils, engineered fill, or a combination of those materials may be sized for maximum allowable "net" soil bearing pressures of 3000 pounds per square foot (psf) for dead plus live loads, with a 1/3 increase for total loads including the short-term effects of wind or seismic forces. The weight of the foundation concrete extending below lowest adjacent soil grade may be disregarded in sizing computations.

We recommend that all foundations be adequately reinforced to provide structural continuity, mitigate cracking and permit spanning of local soil irregularities. The structural engineer or civil engineering consultant should determine final foundation reinforcing requirements.

Resistance to lateral foundation displacement may be computed using an allowable friction factor of 0.30, which may be multiplied by the effective vertical load on each foundation. Additional lateral resistance may be computed using an allowable passive lateral earth pressure against the vertical projection of foundations equal to an equivalent fluid pressure of 300 psf per foot of depth. These two modes of resistance should not be added unless the frictional component is reduced by 50 percent since full mobilization of these resistances may occur at different degrees of horizontal movement.

4.6 Interior Floor Slab Support

Interior concrete slab-on-grade floors can be supported upon the soil subgrade prepared in accordance with the recommendations in this report and maintained in that condition (at least above the optimum moisture content) and are protected from disturbance. Slabs-on-grade should be at least four inches thick, with the final thickness, reinforcement and joint spacing of the slab determined by the project Structural Engineer or slab designer. Proper and consistent location of the reinforcement near mid-slab is essential to its performance. The risk of uncontrolled shrinkage cracking is increased if the reinforcement is not properly located within the slab. Temporary loads exerted during construction from vehicle traffic, construction equipment, storage of palletized construction materials, etc., should be considered in the design of the thickness and reinforcement of the interior slab.

Floor slabs may be underlain by a layer of free-draining crushed rock, serving as a deterrent to migration of capillary moisture. The crushed rock layer should be four to six inches thick and graded such that 100 percent passes a one-inch sieve and no appreciable amount passes a No. 4 sieve. Additional moisture protection may be provided by placing a vapor retarder membrane (at least 10 mils thick) directly over the crushed rock. The membrane should meet or exceed the minimum specifications as outlined in ASTM E1745 and be installed in strict conformance with the manufacturer's recommendations.

Floor slab construction over the past 30 years or more has included placement of a thin layer of sand or pea gravel over the vapor retarder membrane. The intent of the sand/pea gravel is to aid in the proper curing of the slab concrete and is not required from a geotechnical support perspective. However, recent debate over excessive moisture vapor emissions from floor slabs includes concern for water trapped within the sand/pea gravel. Therefore, we consider the use of the sand/pea gravel layer as optional and not required from a geotechnical perspective. The concrete curing benefits should be weighed against efforts to reduce slab moisture vapor transmission.

The recommendations presented above are intended to mitigate any significant soils-related cracking of the slab-on-grade floors. More important to the performance and appearance of a Portland cement concrete slab is the quality of the concrete, the workmanship of the concrete contractor, the curing techniques utilized, and the spacing of control joints.

4.7 Floor Slab Moisture Penetration Resistance

It is considered likely that floor slab subgrade soils will become wet to near saturated at some time during the life of the structure. This is a certainty when slabs are constructed during the wet seasons, or when constantly wet ground or poor drainage conditions exist adjacent to the structure. For this reason, it should be assumed that interior slabs intended for moisture-sensitive floor coverings or materials, require protection against moisture or moisture vapor penetration, mold formation. Standard practice includes the gravel/crushed rock and vapor retarder as suggested above. However, the gravel/crushed rock and plastic membrane offer only a limited, first line of defense against soil-related moisture; they do not moisture-proof the slab.

It is emphasized that the use of a membrane below the slab will not "moisture proof" the slab, nor does it assure that slab moisture transmission levels will be low enough to prevent damage to floor coverings or other building components, or mold formation. If increased protection against moisture vapor penetration of slabs is desired, a concrete moisture protection specialist should be consulted. It is commonly accepted that maintaining the lowest practical water-cement ratio in the slab concrete is one of the most effective ways to reduce future moisture vapor penetration of the completed slabs.

4.8 Utility Trench Backfill

Utility trench backfill should be mechanically compacted as engineered fill in accordance with the following recommendations. Bedding of utilities and initial backfill around and over the pipe should be in accordance with the manufacturer's recommendations for the pipe materials selected, and applicable San Joaquin County requirements. Utility trench backfilling should be continuously observed by a representative of the Geotechnical Engineer during construction.

Utility trench backfill should be placed in relatively thin lifts, moisture conditioned to at least the optimum moisture content and mechanically compacted to at least 90 percent of the ASTM D1557 maximum dry density. The actual lift thickness used will depend on the compaction equipment used but should not be more than six inches (compacted thickness). Within the upper six inches of pavement areas, the minimum compaction should be increased to 95 percent of ASTM D1557.

We recommend that underground utility trenches that are aligned nearly parallel with foundations be at least three feet from the outer edge of foundations, wherever possible. Trenches should not encroach into the zone extending outward at a one horizontal to one vertical (1H:1V) inclination below the bottom of the foundations. Additionally, trenches parallel to existing foundations should not remain open longer than 72 hours. The intent of these recommendations is to prevent loss of both lateral and vertical support of foundations, resulting in possible settlement.

4.9 Exterior Flatwork Construction

Soil subgrade areas to support exterior concrete flatwork should be prepared in accordance with the recommendations presented in the Subgrade Preparation and Engineered Fill Construction sections of this report. Exterior flatwork subgrade soils should be maintained in a moist condition (at least above the optimum moisture content) and protected from disturbance. If this is not the case and subgrade soils become dry and/or disturbed, the exterior flatwork subgrade will require additional scarification, moisture conditioning and compaction prior to construction of the exterior flatwork.

Exterior flatwork should be underlain by at least four inches of aggregate base compacted to at least 95 percent relative compaction (ASTM D1557). The aggregate base should be placed over the prepared subgrade soil compacted to at least 90 percent relative compaction.

Exterior flatwork should be at least four inches thick and reinforced for crack control. The architect or project Civil Engineer should determine the final thickness, strength, reinforcement, and joint spacing of exterior slab-on-grade concrete. Exterior flatwork next to landscaped areas should be thickened to twice the slab thickness for a width of at least six inches to help support lawn mowing equipment and other maintenance equipment. Accurate and consistent location of the reinforcement at mid-slab is essential to its performance and the risk of uncontrolled drying shrinkage slab cracking is increased if the reinforcement is not properly located within the slab.

Uniform moisture conditioning of subgrade soils is important to reduce the risk of non-uniform moisture withdrawal from the concrete and the possibility of plastic shrinkage cracks. Practices recommended by the Portland Cement Association (PCA) for proper placement and curing of concrete should be followed during exterior concrete flatwork construction. Flatwork should be independent of the building foundations and felt strips should be used to separate concrete slabs from building foundations.

Exterior flatwork that will be traversed by vehicles or heavy equipment may require a thicker concrete and/or aggregate base section, depending on the actual traffic loading conditions. Additional recommendations for concrete flatwork that will support vehicular traffic can be provided at a later date.

4.10 Pavement Design

Based on laboratory test results, we used a Resistance (“R”) value of 10 for asphalt pavement design. Pavement sections presented in Table 3 have been calculated using the above R-values and traffic indices (TIs) assumed to be appropriate for this project. The project civil engineer should determine the appropriate traffic index for pavements based on anticipated traffic conditions. If needed, we can provide additional pavement sections for different traffic indices.

Table 3 - Pavement Design Alternatives for Asphalt Concrete Pavements

Traffic Index (TI)	Pavement Use	Soil Subgrades R-value = 10	
		Type B Asphalt Concrete (inches)	Class 2 Aggregate Base (inches)
4.5	Automobile Parking Only	2½*	9
6.5	Drive Aisles and Light to Moderate Truck Traffic and Fire Lanes	3	15
		4*	13

* = Asphalt concrete thickness contains the Caltrans safety factor.

We emphasize that the performance of pavement is critically dependent upon uniform and adequate compaction of the soil subgrade, as well as all engineered fill and utility trench backfill within the limits of the pavements. We recommend that pavement subgrade preparation (i.e., scarification, moisture conditioning and compaction) be performed after underground utility construction is completed and just prior to aggregate base placement. The upper six inches of pavement subgrade soils should be compacted to at least 95 percent relative compaction at no less than the optimum moisture content. All aggregate base should be compacted to at least 95 percent relative compaction.

Pavement subgrades should be stable and unyielding under heavy wheel loads of construction equipment. To help identify unstable subgrades within the pavement limits, a proof-roll should be performed with a fully-loaded water truck (or equivalent) on the exposed subgrades prior to placement of aggregate base. The proof-roll should be observed by the Geotechnical Engineer’s representative.

All pavement materials and construction methods of structural pavement sections should conform to the applicable provisions of the Caltrans Standard Specifications, latest edition.

Pavement Drainage

Efficient drainage of all surface water to avoid infiltration and saturation of the supporting aggregate base and subgrade soils is important to pavement performance. Weep holes could be provided at drainage inlets, located at the subgrade-base interface, to allow accumulated water to drain from beneath the pavements.

Consideration should be given to using full-depth curbs between landscaped areas and pavements to serve as a cut off for water that could migrate into the pavement base materials or subgrade soils.

4.11 Site Drainage

Final site grading should be accomplished to provide positive drainage of surface water away from the structures and prevent ponding of water adjacent to the foundations. The grade adjacent to the structures should be sloped away from foundations at a minimum two percent slope for a distance of at least five feet, where possible. Ponding of surface water should not be allowed adjacent to the structure or exterior concrete flatwork.

4.12 Drought Considerations

The State of California can experience extended periods of severe drought conditions in the future. The ability for landowners to use irrigation as a means for maintaining landscape vegetation and soil moisture likely will be inhibited for unpredictable periods of time. For this reason, landscape and hardscape systems for this development should be carefully planned to prevent the desiccation of soils under and near foundations and slabs. Trees with invasive shallow root systems should be avoided. No trees or large shrubs that could remove soil moisture during dry periods should be planted within five feet of any foundation or slab. Fallow ground adjacent to foundations must be avoided

4.13 Geotechnical Engineering Construction Observation Services

Site preparation should be accomplished in accordance with the recommendations of this report. Representatives of the Geotechnical Engineer should be present during site preparation and all grading operations to observe and test the fill to verify compliance with our recommendations and the job specifications. Testing frequency will depend on how the site is graded and should be determined

during the rough grading operations. These services are beyond the scope of work authorized for this investigation.

In the event that UES is not retained to provide geotechnical engineering observation and testing services during construction, the Geotechnical Engineer retained to provide these services should indicate in writing that they agree with the recommendations of this report or prepare supplemental recommendations as necessary. A final report by the Geotechnical Engineer providing construction testing services should be prepared upon completion of the project.

5.0 LIMITATIONS

Our recommendations are based upon the information provided regarding the proposed project, combined with our analysis of site conditions revealed by the field exploration and laboratory testing programs. We have used our engineering judgment based upon the information provided and the data generated from our investigation. This report has been prepared in substantial compliance with generally accepted geotechnical engineering practices that exist in the area of the project at the time the report was prepared. No warranty, either express or implied, is provided.

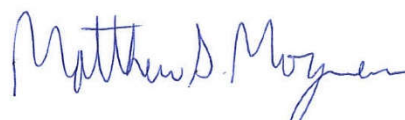
If the proposed construction is modified or re-sited; or, if it is found during construction that subsurface conditions differ from those we encountered at the boring locations, we should be afforded the opportunity to review the new information or changed conditions to determine if our conclusions and recommendations must be modified.

We emphasize that this report is applicable only to the proposed construction and the investigated site, and should not be utilized for construction on any other site. The conclusions and recommendations of this report are considered valid for a period of two years. If design is not completed and construction has not started within two years of the date of this report, the report must be reviewed and updated if necessary.

Universal Engineering Sciences (UES),



Guang H. Zhu
Staff Engineer

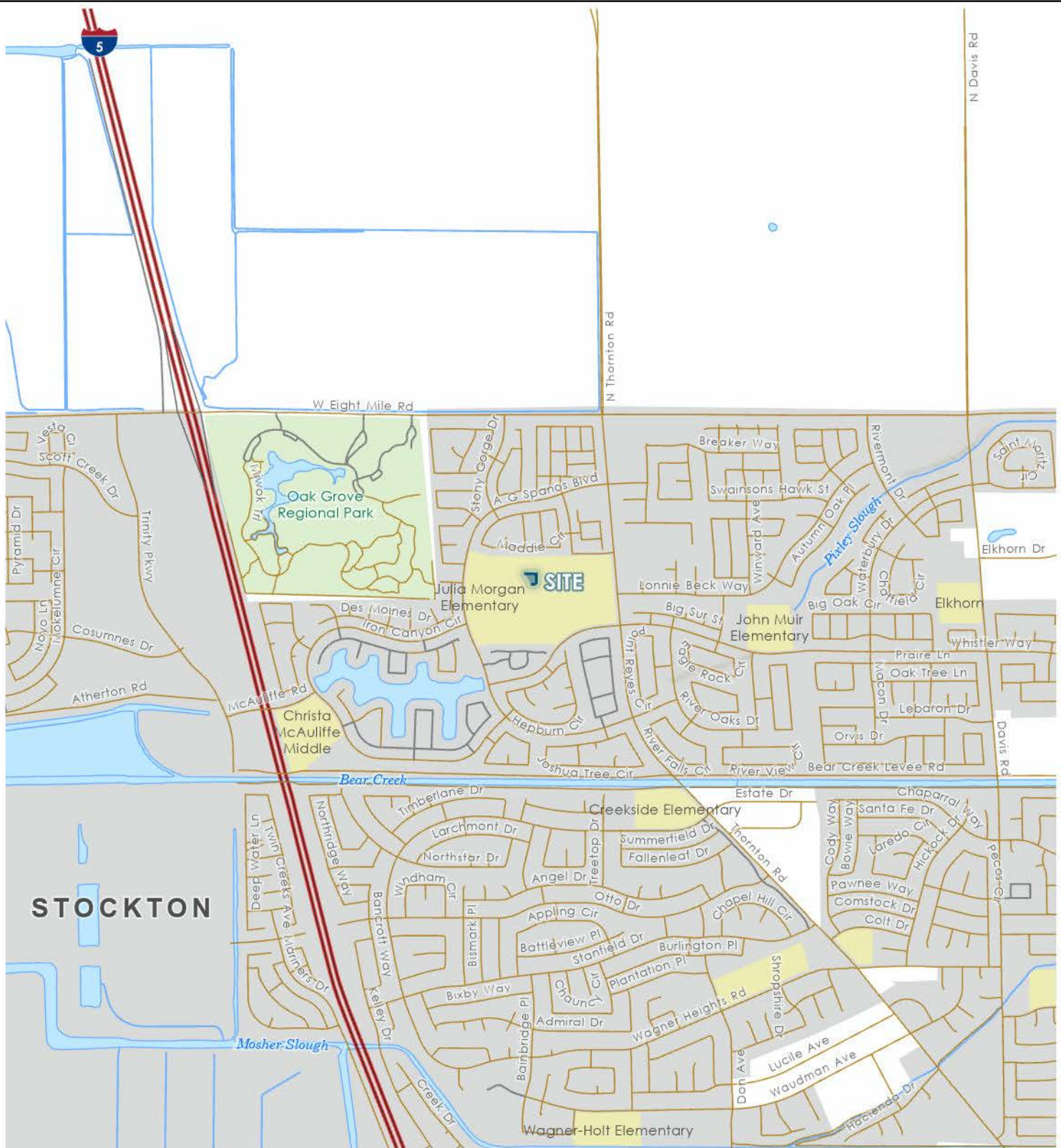


Matthew S. Moyneur
Senior Engineer

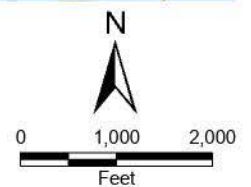




FIGURES



Spatial Data provided by Esri, NOAA, and USGS.
 Projection: NAD 1983 2011 StatePlane California II FIPS 0402 Ft US



VICINITY MAP

BEAR CREEK HIGH SCHOOL AGRICULTURAL SCIENCE BUILDING

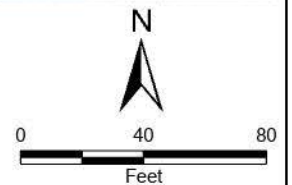
Stockton, California

FIGURE 1	
DRAWN BY	GHZ
CHECKED BY	GHZ
PROJECT MGR	MSM
DATE	06/2023
4730.2300012.0016	



- Approximate Site Boundary
- ◆ Approximate Boring Location

Aerial imagery provided by Esri.
 Projection: NAD 1983 2011 StatePlane California II FIPS 0402 Ft US



SITE PLAN
BEAR CREEK HIGH SCHOOL AGRICULTURAL SCIENCE BUILDING
 Stockton, California

FIGURE	2
DRAWN BY	GHZ
CHECKED BY	GHZ
PROJECT MGR	MSM
DATE	06/2023
4730.2300012.0016	

Project: Bear Creek High School Agricultural Science Building

Project Location: Stockton, California

Project Number: 4730.2300012.0016

LOG OF SOIL BORING D1

Sheet 1 of 1

Date(s) Drilled	5/10/23	Logged By	GHZ	Checked By	MSM
Drilling Method	Solid Flight Auger	Drilling Contractor	V&W Drilling	Total Depth of Drill Hole	15.0 feet
Drill Rig Type	CME 75	Diameter(s) of Hole, inches	6"	Approx. Surface Elevation, ft MSL	
Groundwater Depth [Elevation], feet	N/A	Sampling Method(s)	2.0" Modified California with 6-inch sleeve	Drill Hole Backfill	Neat Cement
Remarks	Bulk (0-3')			Driving Method and Drop	140lb auto. hammer with 30" drop

ELEVATION, feet	DEPTH, feet	GRAPHIC LOG	ENGINEERING CLASSIFICATION AND DESCRIPTION	SAMPLE	SAMPLE DATA		TEST DATA		
					SAMPLE NUMBER	NUMBER OF BLOWS	MOISTURE CONTENT, %	DRY UNIT WEIGHT, pcf	ADDITIONAL TESTS
1			Dark brown, moist, very stiff, lean CLAY (CL)						
2					D1 (0-3')				EI = 41
3			Brown, moist, medium dense, silty fine to medium SAND (SM)		D1-11	23	14	97	PP = 3.0 tsf
4									
5									
6					D1-21	14	15	104	
7									
8									
9					D1-31	30	12	120	
10									
11									
12									
13									
14			fine to coarse sand, decreased fines content		D1-41	28	5	99	
15									
			Boring terminated at approximately 15 feet below existing ground surface. Groundwater was not encountered.						

BORING LOG 4730.2300012.0016 - BEAR CREEK HIGH SCHOOL AG SCIENCE BUILDING.GPJ WKA.GDT 6/9/23 2:50 PM



FIGURE 3

Project: Bear Creek High School Agricultural Science Building

Project Location: Stockton, California

Project Number: 4730.2300012.0016

LOG OF SOIL BORING D2

Sheet 1 of 1

Date(s) Drilled	5/10/23	Logged By	GHZ	Checked By	MSM
Drilling Method	Solid Flight Auger	Drilling Contractor	V&W Drilling	Total Depth of Drill Hole	6.5 feet
Drill Rig Type	CME 75	Diameter(s) of Hole, inches	6"	Approx. Surface Elevation, ft MSL	
Groundwater Depth [Elevation], feet	N/A	Sampling Method(s)	2.0" Modified California with 6-inch sleeve	Drill Hole Backfill	Neat Cement
Remarks	Bulk (0-3')			Driving Method and Drop	140lb auto. hammer with 30" drop

ELEVATION, feet	DEPTH, feet	GRAPHIC LOG	ENGINEERING CLASSIFICATION AND DESCRIPTION	SAMPLE DATA			TEST DATA		
				SAMPLE	SAMPLE NUMBER	NUMBER OF BLOWS	MOISTURE CONTENT, %	DRY UNIT WEIGHT, pcf	ADDITIONAL TESTS
	1		Brown, moist, dense, silty fine to medium SAND (SM)		D2 (0-3')				
	2								
	3				D2-11	49	14	110	
	4								
	5		medium dense						
	6				D2-21	31	19	105	
			Boring terminated at approximately 6½ feet below existing ground surface. Groundwater was not encountered.						

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FIGURE 4

Project: Bear Creek High School Agricultural Science Building

Project Location: Stockton, California

Project Number: 4730.2300012.0016

LOG OF SOIL BORING D3

Sheet 1 of 1

Date(s) Drilled	5/10/23	Logged By	GHZ	Checked By	MSM
Drilling Method	Solid Flight Auger	Drilling Contractor	V&W Drilling	Total Depth of Drill Hole	6.5 feet
Drill Rig Type	CME 75	Diameter(s) of Hole, inches	6"	Approx. Surface Elevation, ft MSL	
Groundwater Depth [Elevation], feet	N/A	Sampling Method(s)	2.0" Modified California with 6-inch sleeve	Drill Hole Backfill	Neat Cement
Remarks	Bulk (0-3')			Driving Method and Drop	140lb auto. hammer with 30" drop

ELEVATION, feet	DEPTH, feet	GRAPHIC LOG	ENGINEERING CLASSIFICATION AND DESCRIPTION	SAMPLE DATA			TEST DATA		
				SAMPLE	SAMPLE NUMBER	NUMBER OF BLOWS	MOISTURE CONTENT, %	DRY UNIT WEIGHT, pcf	ADDITIONAL TESTS
	1		Brown, moist, dense, silty fine to coarse SAND (SM)						
	2				D3 (0-3')				RV = 20
	3				D3-11	38	15	109	
	4								
	5								
	6		Brown with reddish brown mottling, moist, dense, sandy SILT (ML)		D3-21	42	26	95	
			Boring terminated at approximately 6½ feet below existing ground surface. Groundwater was not encountered.						

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FIGURE 5

Project: Bear Creek High School Agricultural Science Building

Project Location: Stockton, California

Project Number: 4730.2300012.0016

LOG OF SOIL BORING D4

Sheet 1 of 1

Date(s) Drilled	5/10/23	Logged By	GHZ	Checked By	MSM
Drilling Method	Solid Flight Auger	Drilling Contractor	V&W Drilling	Total Depth of Drill Hole	16.5 feet
Drill Rig Type	CME 75	Diameter(s) of Hole, inches	6"	Approx. Surface Elevation, ft MSL	
Groundwater Depth [Elevation], feet	N/A	Sampling Method(s)	2.0" Modified California with 6-inch sleeve	Drill Hole Backfill	Neat Cement
Remarks	Bulk (0-3')			Driving Method and Drop	140lb auto. hammer with 30" drop






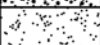

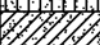


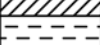




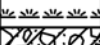

ELEVATION, feet	DEPTH, feet	GRAPHIC LOG	ENGINEERING CLASSIFICATION AND DESCRIPTION	SAMPLE	SAMPLE DATA		TEST DATA		
					SAMPLE NUMBER	NUMBER OF BLOWS	MOISTURE CONTENT, %	DRY UNIT WEIGHT, pcf	ADDITIONAL TESTS
1			Dark brown, moist, very stiff, lean CLAY (CL) with sand		D4 (0-3')				EI = 41 RV = 12
2					D4-11	16	16	94	
3			Light brown, moist, medium dense, silty fine to medium SAND (SM)						
4									
5			Brown, moist, dense, sandy SILT (ML)						
6					D4-21	42	27	93	
7									
8									
9			Brown, moist, medium dense, silty fine to medium SAND (SM)						
10					D4-31	17	12	108	
11									
12									
13									
14									
15									
16			fine to coarse sand		D4-41	19	7	104	
			Boring terminated at approximately 16½ feet below existing ground surface. Groundwater was not encountered.						

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FIGURE 6

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D2487)

MAJOR DIVISIONS		USCS ⁴	CODE	CHARACTERISTICS
COARSE GRAINED SOILS (More than 50% of soil > no. 200 sieve size)	<u>GRAVELS</u> ¹ (More than 50% of coarse fraction > no. 4 sieve size)	GW		Well-graded gravels or gravel - sand mixtures, trace or no fines
		GP		Poorly graded gravels or gravel - sand mixtures, trace or no fines
		GM		Silty gravels, gravel - sand - silt mixtures, containing little to some fines ²
		GC		Clayey gravels, gravel - sand - clay mixtures, containing little to some fines ²
	<u>SANDS</u> ¹ (50% or more of coarse fraction < no. 4 sieve size)	SW		Well-graded sands or sand - gravel mixtures, trace or no fines
		SP		Poorly graded sands or sand - gravel mixtures, trace or no fines
		SM		Silty sands, sand - gravel - silt mixtures, containing little to some fines ²
		SC		Clayey sands, sand - gravel - clay mixtures, containing little to some fines ²
FINE GRAINED SOILS (50% or more of soil < no. 200 sieve size)	<u>SILTS & CLAYS</u> <u>LL < 50</u>	ML		Inorganic silts, gravelly silts, and sandy silts that are non-plastic or with low plasticity
		CL		Inorganic lean clays, gravelly lean clays, sandy lean clays of low to medium plasticity ³
		OL		Organic silts, organic lean clays, and organic silty clays
	<u>SILTS & CLAYS</u> <u>LL ≥ 50</u>	MH		Inorganic elastic silts, gravelly elastic silts, and sandy elastic silts
		CH		Inorganic fat clays, gravelly fat clays, sandy fat clays of medium to high plasticity
		OH		Organic fat clays, gravelly fat clays, sandy fat clays of medium to high plasticity
HIGHLY ORGANIC SOILS		PT		Peat
ROCK		RX		Rocks, weathered to fresh
FILL		FILL		Artificially placed fill material

OTHER SYMBOLS

	= Drive Sample: 2-1/2" O.D. Modified California sampler
	= Drive Sampler: no recovery
	= SPT Sampler
	= Initial Water Level
	= Final Water Level
	= Estimated or gradational material change line
	= Observed material change line
<u>Laboratory Tests</u>	
CR	= Corrosion
PI	= Plasticity Index
EI	= Expansion Index
UCC	= Unconfined Compression Test (TSF)
TR	= Triaxial Compression Test
GR	= Gradational Analysis (Sieve/Hydro)
FC	= Wash (Fines Content)
PP	= Pocket Penetrometer Test (TSF)
PID	= Photo Ionization Detector Test (PPM)
RV	= Resistance ("R") Value

REF = Refusal (>50 blows in 6 inches)

GRAIN SIZE CLASSIFICATION

CLASSIFICATION	RANGE OF GRAIN SIZES	
	U.S. Standard Sieve Size	Grain Size in Millimeters
BOULDERS (b)	Above 12"	Above 300
COBBLES (c)	12" to 3"	300 to 75
GRAVEL (g) coarse fine	3" to No. 4	75 to 4.75
	3" to 3/4"	75 to 19
	3/4" to No. 4	19 to 4.75
SAND coarse medium fine	No. 4 to No. 200	4.75 to 0.075
	No. 4 to No. 10	4.75 to 2.00
	No. 10 to No. 40	2.00 to 0.425
	No. 40 to No. 200	0.425 to 0.075
SILT & CLAY	Below No. 200	Below 0.075

Trace - Less than 5 percent

Few - 5 to 10 percent

Little - 15 to 25 percent

Some - 35 to 45 percent

Mostly - 50 to 100 percent

* Percents as given in ASTM D2488

NOTES:

- Coarse grained soils containing 5% to 12% fines, use dual classification symbol (ex. SP-SM).
- If fines classify as CL-ML (4<PI<7), use dual symbol (ex. SC-SM).
- Silty Clays, use dual symbol (CL-ML).
- Borderline soils with uncertain classification list both classifications (ex. CL/ML).



□□□□□D□□□□□□□□□□□□□□□□□□□□□M□

BEAR CREEK HIGH SCHOOL AGRICULTURAL SCIENCE BUILDING

Stockton, California

FIGURE 7

DRAWN BY	GHZ
CHECKED BY	MSM
PROJECT MGR	MSM
DATE	07/2023
73023000200	



APPENDIX A

General Project Information, Laboratory Testing and Results

APPENDIX A

A. GENERAL INFORMATION

The performance of a geotechnical engineering study for the proposed Agricultural Science Building to be located within the existing Bear Creek High School campus located at 10555 Thornton Road in Stockton, California 95209 was authorized by Mr. Leonard Kahn with Lodi Unified School District (LUSD) on April 4, 2023. Authorization was for a study as described in our proposal letter dated April 4, 2023 sent to LUSD whose mailing address 1305 East Vine Street in Lodi, California 95240.

B. FIELD EXPLORATIONS

As part of our study for the proposed improvements, our field exploration included performing four soil borings (D1 through D4) at the approximate locations shown on Figure 2.

The soil borings were performed on May 10, 2023 to depths ranging from about 6½ to 16½ feet below existing site grades utilizing a CME-75 truck-mounted drilling rig equipped with six-inch-diameter solid flight augers. At various intervals soil samples were recovered with a 2½-inch outside diameter (O.D.), 2-inch inside diameter (I.D.), modified California split-spoon sampler. The sampler was driven by an automatic 140-pound hammer freely falling 30 inches. The number of blows of the hammer required to drive the 18-inch long samplers each six-inch interval were recorded. The sum of the blows required to drive the sampler the lower 12-inch interval is designated the penetration resistance or "blow count" for that particular drive.

The modified California samples were retained in 2-inch diameter by 6-inch long, thin walled brass tubes contained within the sampler. After recovery, the field representative visually classified the soil recovered in the tubes. After the samples were classified, the ends of the tubes were sealed to preserve the natural moisture contents.

Pocket penetrometer testing was performed during drilling operations on select cohesive soil samples obtained at the boring locations. In pocket penetrometer testing, the unconfined compressive strength of a cohesive soil sample is estimated by measuring the resistance of the sample to penetration of a relatively small, calibrated, spring-loaded cylinder. The maximum capacity of the penetrometer is 4.5 tons per square-foot (tsf). The unconfined compressive strength estimated from pocket penetrometer testing on the select cohesive soil samples is

included on the boring logs at the depth the sample tested was obtained. The approximate undrained shear strength of the samples tested is one-half of the unconfined compressive strength.

Descriptions of the soils encountered in the borings are presented on Figures 3 through 6. An explanation of the Unified Soil Classification System symbols used in the descriptions is presented on Figure 7.

C. LABORATORY TESTING

Selected soil samples were tested to determine dry unit weight (ASTM D2937) and natural moisture content (ASTM D4643). The results of these tests are included on the boring logs at the depth each sample was obtained.

Two samples of the near-surface soil were subjected to Expansion Index testing (ASTM D4829). The test results are presented in Figures A1 and A2.

Two bulk samples of near-surface soil were subjected to Resistance-value ("R") testing in accordance with California Test 301. The results of the R-value testing, which were used in the pavement design, is presented in Figure A3.

One sample of representative near-surface soil was submitted to Sunland Analytical to determine the soil pH and minimum resistivity (California Test 643), Sulfate concentration (California Test 417), and Chloride concentration (California Test 422). The test results are presented in Figure A4.

EXPANSION INDEX TEST RESULTS

ASTM D1585

MATERIAL DESCRIPTION: Darby, lean CLAY

LOCATION: D

Sample Depth	Pre-Test Moisture %	Post-Test Moisture %	Dry Density pcf	Expansion Index
0 - 3	10	11	12	11

CLASSIFICATION OF EXPANSIVE SOIL

EXPANSION INDEX	POTENTIAL EXPANSION
0 - 20 Slight 20 - 30 Moderate Above 30 High	Very Low Low Medium High Very High

From ASTM D1585, Table 1

EXPANSION INDEX TEST RESULTS

ASTM D1585

MATERIAL DESCRIPTION: Dark Brown, lean CLAY

LOCATION: D1

Sample Depth	Pre-Test Moisture (%)	Post-Test Moisture (%)	Dry Density (pcf)	Expansion Index
0 - 3"	20.0	27.7	105	100

CLASSIFICATION OF EXPANSIVE SOIL

EXPANSION INDEX	POTENTIAL EXPANSION
0 - 20 Slight 20 - 30 Medium Above 30 High	Very Low Low Medium High Very High

From ASTM D1585, Table 1

RESISTANCE VALUE TEST RESULTS

California Test 3000

MATERIAL DESCRIPTION Broan, silt SAND

LOCATION D3 03

Specimen No	Drain in in	Moisture in in	Elevation Pressure in	Expansion		R Value
				dial, in	in	
1	2	22	22	0	0	2
2	2	33	07		22	30
3	23	77	33			2

R Value at 300 in elevation pressure 20

MATERIAL DESCRIPTION Broan, lean CLAY silt sand

LOCATION D3 03

Specimen No	Drain in in	Moisture in in	Elevation Pressure in	Expansion		R Value
				dial, in	in	
1	7	37	20	0	0	
2		2			3	7
3		33	3		7	

R Value at 300 in elevation pressure 2



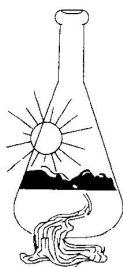
RESISTANCE VALUE TEST RESULTS

BEAR CREEK HIGH SCHOOL AGRICULTURAL SCIENCE BUILDING
Stockton, California

FIGURE A3

DRAWN BY	GHZ
CHECKED BY	GHZ
PROJECT MGR	MSM
DATE	07/2023

73023000200



Sunland Analytical

11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported 05/17/2023

Date Submitted 05/12/2023

To: Guang Zhu
Universal Engineering Science
3050 Industrial Blvd
West Sacramento, CA 95691

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : 4730.2300012.0010 Site ID : D1 @ 0-3FT.
Thank you for your business.

* For future reference to this analysis please use SUN # 89609-186077.

EVALUATION FOR SOIL CORROSION

Soil pH	7.68		
Minimum Resistivity	2.01	ohm-cm (x1000)	
Chloride	2.7 ppm	00.00027	%
Sulfate	13.4 ppm	00.00134	%

METHODS

pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422m



CORROSION TEST RESULTS

BEAR CREEK HIGH SCHOOL AGRICULTURAL SCIENCE BUILDING
Stockton, California

FIGURE A

DRAWN BY	GHZ
CHECKED BY	MSM
PROJECT MGR	MSM
DATE	05/2023

4730.2300012.0010

BID FORM AND PROPOSAL

To: Governing Board of the Lodi Unified School District ("District" or "Owner")

From: _____
(Proper Name of Bidder)

The undersigned declares that Bidder has read and understands the Contract Documents, including, without limitation, the Notice to Bidders and the Instructions to Bidders, and agrees and proposes to furnish all necessary labor, materials, and equipment to perform and furnish all work in accordance with the terms and conditions of the Contract Documents, including, without limitation, the Drawings and Specifications for the following project known as:

Bear Creek High School Site Work Agriculture Complex, Bid Package 0819-8019-1

("Project" or "Contract") and will accept in full payment for that Work the following total lump sum amount, all taxes included:

_____ dollars \$ _____
BASE BID

_____ dollars \$ _____
Allowance 10%

_____ dollars \$ _____
TOTAL BID

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

1. **Allowance.** The Bidder's Base Bid and each alternate shall include a ten percent (10%) allowance for unforeseen items.

The above allowance shall only be allocated for unforeseen items relating to the Work. Contractor shall not bill for or be due any portion of this allowance unless the District has identified specific work, Contractor has submitted a price for that work or the District has proposed a price for that work, the District has accepted the cost for that work, and the District has prepared an Allowance Expenditure Directive incorporating that work. Contractor hereby authorizes the District to execute a unilateral deductive change order at or near the end of the Project for all or any portion of the allowance not allocated.

2. **~~OCIP.~~ NOT USED**

3. The undersigned has reviewed the Work outlined in the Contract Documents and fully understands the scope of Work required in this Proposal, understands the construction and project management function(s) is described in the Contract Documents, and that each Bidder who is awarded a contract shall be in fact a prime contractor, not a subcontractor, to the District, and agrees that its Proposal, if accepted by the District, will be the basis for the Bidder to enter into a contract with the District in accordance with the intent of the Contract Documents.
4. The undersigned has notified the District in writing of any discrepancies or omissions or of any doubt, questions, or ambiguities about the meaning of any of the Contract Documents, and has contacted the Construction Manager before bid date to verify the issuance of any clarifying Addenda.
5. The undersigned agrees to commence work under this Contract on the date established in the Contract Documents and to complete all work within the time specified in the Contract Documents.
6. The liquidated damages clause of the General Conditions and Agreement is hereby acknowledged.
7. It is understood that the District reserves the right to reject this bid and that the bid shall remain open to acceptance and is irrevocable for a period of ninety (90) days.
8. The following documents are attached hereto:
 - Bid Bond on the District's form or other security
 - Designated Subcontractors List
 - Site Visit Certification
 - Non-Collusion Declaration
 - Iran Contracting Act Certification

9. Receipt and acceptance of the following Addenda is hereby acknowledged:

No. _____, Dated _____	No. _____, Dated _____
No. _____, Dated _____	No. _____, Dated _____
No. _____, Dated _____	No. _____, Dated _____

10. Bidder acknowledges that the license required for performance of the Work is a A and/or B license.
11. Bidder hereby certifies that Bidder is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the Work.
12. Bidder specifically acknowledges and understands that if it is awarded the Contract, that it shall perform the Work of the Project while complying with all requirements of the Department of Industrial Relations.
13. Bidder hereby certifies that its bid includes sufficient funds to permit Bidder to comply with all local, state or federal labor laws or regulations during the Project, including payment of prevailing wage, and that Bidder will comply with the provisions of Labor Code section 2810(d) if awarded the Contract
14. Bidder specifically acknowledges and understands that if it is awarded the Contract, that it shall perform the Work of the Project while complying with the Davis Bacon Act, applicable reporting requirements, and any and all other applicable requirements for federal funding. If a conflict exists, the more stringent requirement shall control.
15. Bidder represents that it is competent, knowledgeable, and has special skills with respect to the nature, extent, and inherent conditions of the Work to be performed. Bidder further acknowledges that there are certain peculiar and inherent conditions existent in the construction of the Work that may create, during the Work, unusual or peculiar unsafe conditions hazardous to persons and property.
16. Bidder expressly acknowledges that it is aware of such peculiar risks and that it has the skill and experience to foresee and to adopt protective measures to adequately and safely perform the Work with respect to such hazards.
17. Bidder expressly acknowledges that it is aware that if a false claim is knowingly submitted (as the terms "claim" and "knowingly" are defined in the California False Claims Act, Gov. Code, § 12650 et seq.), the District will be entitled to civil remedies set forth in the California False Claim Act. It may also be considered fraud and the Contractor may be subject to criminal prosecution.
18. The undersigned Bidder certifies that it is, at the time of bidding, and shall be throughout the period of the Contract, licensed by the State of California to do the type of work required under the terms of the Contract Documents and registered as a public works contractor with the Department of Industrial Relations. Bidder further

certifies that it is regularly engaged in the general class and type of work called for in the Contract Documents.

Furthermore, Bidder hereby certifies to the District that all representations, certifications, and statements made by Bidder, as set forth in this bid form, are true and correct and are made under penalty of perjury.

Dated this _____ day of _____ 20 ____

Name of Bidder: _____

Type of Organization: _____

Signed by: _____

Title of Signer: _____

Address of Bidder: _____

Taxpayer Identification No. of Bidder: _____

Telephone Number: _____

Fax Number: _____

E-mail: _____ Web Page: _____

Contractor's License No(s): No.: _____ Class: _____ Expiration Date: _____

No.: _____ Class: _____ Expiration Date: _____

No.: _____ Class: _____ Expiration Date: _____

Public Works Contractor Registration No.: _____

END OF DOCUMENT

BID BOND

(Note: If Bidder is providing a bid bond as its bid security, Bidder must use this form, NOT a surety company form.)

KNOW ALL PERSONS BY THESE PRESENTS:

That the undersigned, _____, as Principal ("Principal"),

and _____, as Surety ("Surety"), a corporation organized and existing under and by virtue of the laws of the State of California and authorized to do business as a surety in the State of California, are held and firmly bound unto the Lodi Unified School District ("District") of San Joaquin County, State of California, as Obligee, in an amount equal to ten percent (10%) of the Base Bid plus alternates, in the sum of

_____ Dollars (\$ _____)

lawful money of the United States of America, for the payment of which sum well and truly to be made, we, and each of us, bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that whereas the Principal has submitted a bid to the District for all Work specifically described in the accompanying bid for the following project: **Bear Creek High School Site Work Agriculture Complex, Bid Package 0819-8019-1** ("Project" or "Contract").

NOW, THEREFORE, if the Principal is awarded the Contract and, within the time and manner required under the Contract Documents, after the prescribed forms are presented to Principal for signature, enters into a written contract, in the prescribed form in accordance with the bid, and files two bonds, one guaranteeing faithful performance and the other guaranteeing payment for labor and materials as required by law, and meets all other conditions to the Contract between the Principal and the Obligee becoming effective, or if the Principal shall fully reimburse and save harmless the Obligee from any damage sustained by the Obligee through failure of the Principal to enter into the written contract and to file the required performance and labor and material bonds, and to meet all other conditions to the Contract between the Principal and the Obligee becoming effective, then this obligation shall be null and void; otherwise, it shall be and remain in full force and effect. The full payment of the sum stated above shall be due immediately if Principal fails to execute the Contract within seven (7) days of the date of the District's Notice of Award to Principal.

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 to the work to be performed thereunder, or the specifications accompanying the same, shall in any way 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 the Contract or the call for bids, or to the work, or to the specifications.

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 a reasonable attorneys' fee to be fixed by the Court.

If the District awards the bid, the security of unsuccessful bidder(s) shall be returned within sixty (60) days from the time the award is made. Unless otherwise required by law, no bidder may withdraw its bid for ninety (90) days after the date of the bid opening.

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

Principal

By

Surety

By

Name of California Agent of Surety

Address of California Agent of Surety

Telephone Number of California Agent of Surety

Bidder must attach Power of Attorney and Certificate of Authority for Surety and a Notarial Acknowledgment for all Surety's signatures. The California Department of Insurance must authorize the Surety to be an admitted Surety Insurer.

END OF DOCUMENT

DESIGNATED SUBCONTRACTORS LIST
(Public Contact Code Sections 4100-4114)

PROJECT: **Bear Creek High School Site Work Agriculture Complex, Bid
Package 0819-8019-1**

Bidder acknowledges and agrees that it must clearly set forth below the name, location and California contractor license number of each subcontractor who will perform work or labor or render service to the Bidder in or about the construction of the Work or who will specially fabricate and install a portion of the Work according to detailed drawings contained in the plans and specifications in an amount in excess of one-half of one percent (0.5%) of Bidder's total Base Bid and the kind of Work that each will perform. Vendors or suppliers of materials only do not need to be listed.

Bidder acknowledges and agrees that, if Bidder fails to list as to any portion of Work, or if Bidder lists more than one subcontractor to perform the same portion of Work, Bidder must perform that portion itself or be subjected to penalty under applicable law. In case more than one subcontractor is named for the same kind of Work, state the portion of the kind of Work that each subcontractor will perform.

If alternate bid(s) is/are called for and Bidder intends to use subcontractors different from or in addition to those subcontractors listed for work under the Base Bid, Bidder must list subcontractors that will perform Work in an amount in excess of one half of one percent (0.5%) of Bidder's total Base Bid plus alternate(s).

If further space is required for the list of proposed subcontractors, attach additional copies of page 2 showing the required information, as indicated below.

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

Portion of Work: _____

Subcontractor Name: _____

CA Cont. Lic. #: _____ Location: _____

Portion of Work: _____

Date: _____

Proper Name of Bidder: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

SITE VISIT CERTIFICATION

TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID
IF SITE VISIT WAS MANDATORY

PROJECT: **Bear Creek High School Site Work Agriculture Complex, Bid
Package 0819-8019-1**

Check option that applies:

_____ I certify that I visited the Site of the proposed Work, received the attached _____ pages of information, and became fully acquainted with the conditions relating to construction and labor. I fully understand the facilities, difficulties, and restrictions attending the execution of the Work under contract.

_____ I certify that _____ (Bidder's representative) visited the Site of the proposed Work, received the attached _____ pages of information, and became fully acquainted with the conditions relating to construction and labor. The Bidder's representative fully understood the facilities, difficulties, and restrictions attending the execution of the Work under contract.

Bidder fully indemnifies the Lodi Unified School District, its Architect, its Engineers, its Construction Manager, and all of their respective officers, agents, employees, and consultants from any damage, or omissions, related to conditions that could have been identified during my visit and/or the Bidder's representative's visit to the Site.

I certify under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Date: _____

Proper Name of Bidder: _____

Signature: _____

Print Name: _____

Title: _____

ATTACHMENTS:

1. ☐

2. ☐

3. ☐

END OF DOCUMENT

**NON-COLLUSION DECLARATION
(Public Contract Code Section 7106)**

The undersigned declares:

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

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]

Date: _____

Proper Name of Bidder: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

IRAN CONTRACTING ACT CERTIFICATION
(Public Contract Code Sections 2202-2208)

PROJECT/CONTRACT NO.: **Bear Creek High School Site Work Agriculture Complex, Bid Package 0819-8019-1** between the Lodi Unified School District ("District") and _____ ("Contractor" or "Bidder")

("Contract" or "Project").

Prior to bidding on or submitting a proposal for a contract for goods or services of \$1,000,000 or more, the bidder/proposer must submit this certification pursuant to Public Contract Code section 2204.

The bidder/proposer must complete **ONLY ONE** of the following two options. To complete OPTION 1, check the corresponding box **and** complete the certification below. To complete OPTION 2, check the corresponding box, complete the certification below, and attach documentation demonstrating the exemption approval.

- ☐ **OPTION 1.** Bidder/Proposer is not on the current list of persons engaged in investment activities in Iran created by the California Department of General Services ("DGS") pursuant to Public Contract Code section 2203(b), and we are not a financial institution extending twenty million dollars (\$20,000,000) or more in credit to another person, for 45 days or more, if that other person will use the credit to provide goods or services in the energy sector in Iran and is identified on the current list of persons engaged in investment activities in Iran created by DGS.
- ☐ **OPTION 2.** Bidder/Proposer has received a written exemption from the certification requirement pursuant to Public Contract Code sections 2203(c) and (d). *A copy of the written documentation demonstrating the exemption approval is included with our bid/proposal.*

CERTIFICATION:

I, the official named below, CERTIFY UNDER PENALTY OF PERJURY, that I am duly authorized to legally bind the bidder/proposer to the OPTION selected above. This certification is made under the laws of the State of California.

<i>Vendor Name/Financial Institution (Printed)</i>	<i>Federal ID Number (or n/a)</i>
<i>By (Authorized Signature)</i>	
<i>Printed Name and Title of Person Signing</i>	<i>Date Executed</i>

END OF DOCUMENT

WORKERS' COMPENSATION CERTIFICATION

PROJECT/CONTRACT NO.: **Bear Creek High School Site Work Agriculture Complex, Bid Package 0819-8019-1** between the Lodi Unified School District ("District") and _____ ("Contractor" or "Bidder") ("Contract" or "Project").

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:

- a. By being insured against liability to pay compensation by one or more insurers duly authorized to write compensation insurance in this state; and/or
- b. 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 his employees.

I am aware of the provisions of section 3700 of the Labor Code 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 provisions before commencing the performance of the Work of this Contract.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

(In accordance with Labor Code sections 1860 and 1861, the above certificate must be signed and filed with the awarding body prior to performing any Work under this Contract.)

END OF DOCUMENT

**PREVAILING WAGE AND
RELATED LABOR REQUIREMENTS CERTIFICATION**

PROJECT/CONTRACT NO.: **Bear Creek High School Site Work Agriculture Complex,
Bid Package 0819-8019-1** between the Lodi Unified School District ("District") and _____

("Contract" or "Project").

I hereby certify that I will conform to the State of California Public Works Contract requirements regarding prevailing wages, benefits, on-site audits with 48-hours' notice, payroll records, and apprentice and trainee employment requirements, for all Work on the above Project including, without limitation, labor compliance monitoring and enforcement by the Department of Industrial Relations.

[IF THIS PROJECT USES FEDERAL FUNDS, DISTRICT SHOULD INCLUDE THE FOLLOWING] I hereby certify that I will also conform to the Federal Labor Standards Provisions regarding minimum wages, withholding, payrolls and basic records, apprentice and trainee employment requirements, equal employment opportunity requirements, Copeland Act requirements, Davis-Bacon and Related Act requirements, Contract Work Hours and Safety Standards Act requirements, and any and all other applicable requirements for federal funding for all Work on the above Project.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

**DISABLED VETERAN BUSINESS
ENTERPRISE PARTICIPATION CERTIFICATION**

PROJECT/CONTRACT NO.: **Bear Creek High School Site Work Agriculture Complex, Bid Package 0819-8019-1** between the Lodi Unified School District ("District") and _____ ("Contractor" or "Bidder") ("Contract" or "Project").

GENERAL INSTRUCTIONS

Section 17076.11 of the Education Code requires school districts using, or planning to use, funds allocated pursuant to the State of California School Facility Program ("Program") for the construction and/or modernization of school buildings to have a participation goal for disabled veteran business enterprises ("DVBE") of at least three percent (3%) per year of the overall dollar amount expended each year by the school district on projects that receive state funding. Therefore, the lowest responsive responsible Bidder awarded the Contract must submit this document to the District with its executed Agreement, identifying the steps contractor took to solicit DVBE participation in conjunction with this Contract. **Do not submit this form with your bids.**

PART I – Method of Compliance with DVBE Participation Goals. Check the appropriate box to indicate your method of committing the contract dollar amount.

YOUR BUSINESS ENTERPRISE IS:	AND YOU WILL	AND YOU WILL
A. <input type="checkbox"/> Disabled veteran owned and your forces will perform at least 3% of this Contract	Include a copy of your DVBE letter from Office of Small Business and Disabled Veterans Business Enterprise Services ("OSDS")*	Complete Part 1 of this form and the Certification
B. <input type="checkbox"/> Disabled veteran owned but is unable to perform 3% of this Contract with your forces	Use DVBE subcontractors /suppliers to bring the Contract participation to at least 3%	Include a copy of each DVBE's letter from OSDS (including yours, if applicable), and complete Part 1 of this form and the Certification
C. <input type="checkbox"/> NOT disabled veteran owned	Use DVBE subcontractors /suppliers for at least 3% of this Contract	
D. <input type="checkbox"/> Unable to meet the required participation goals	Complete all of this form and the Certification	

* A DVBE letter from OSDS is obtained from the participating DVBE.

You must complete the following table to show the dollar amount of DVBE participation:

	TOTAL CONTRACT PRICE
A. Prime Bidder, if DVBE (own participation)	\$
B. DVBE Subcontractor or Supplier	
1. <input type="checkbox"/>	
2. <input type="checkbox"/>	
3. <input type="checkbox"/>	
4. <input type="checkbox"/>	
C. Subtotal (A & B)	
D. Non-DVBE	
E. Total Bid	

PART II ☐ Contacts. To identify DVBE subcontractors/suppliers for participation in your contract, you must contact each of the following categories. You should contact several DVBE organizations.

CATEGORY	TELEPHONE NUMBER	DATE CONTACTED	PERSON CONTACTED
1. <input type="checkbox"/> The District, if any			*
2. <input type="checkbox"/> OSDs, provides assistance locating DVBEs at https://caleprocure.ca.gov/pages/PublicSearch/supplier-search.aspx	(916) 375-4940		*
3. <input type="checkbox"/> DVBE Organization (List)			*

*Write "recorded message" in this column, if applicable.

PART III – Advertisement. You must advertise for DVBE participation in both a trade and focus paper. List the advertisement you place to solicit DVBE participation. Advertisements should be published at least fourteen (14) days prior to bid/proposal opening; if you cannot advertise fourteen (14) days prior, advertisements should be published as soon as possible. Advertisements must include that your firm is seeking DVBE participation, the project name and location, and your firm's name, your contact person, and telephone number. Attach copies of advertisements to this form.

FOCUS/TRADE PAPER NAME	CHECK ONE		DATE OF ADVERTISEMENT
	TRADE	FOCUS	

PART IV – DVBE Solicitations. List DVBE subcontractors/suppliers that were invited to bid. Use the following instructions to complete the remainder of this section (read the three columns as a sentence from left to right). If you need additional space to list DVBE solicitations, please use a separate page and attach to this form.

IF THE DVBE.....	THEN.....		AND.....	
was selected to participate	Check "YES" in the "SELECTED" column		include a copy of their DVBE letter(s) from OSDS	
was NOT selected to participate	Check "NO" in the "SELECTED" column		state why in the "REASON NOT SELECTED" column	
did not respond to your solicitation	Check the "NO RESPONSE" column.			
DVBE CONTACTED	SELECTED		REASON NOT SELECTED	NO RESPONSE
	YES	NO		

A copy of this form must be retained by you and may be subject to a future audit.

CERTIFICATION

I, _____, certify that I am the bidder's _____
and that I have made a diligent effort to ascertain the facts with regard to the
representations made herein. In making this certification, I am aware of section 12650 et
seq. of the Government Code providing for the imposition of treble damages for making
false claims.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

DRUG-FREE WORKPLACE CERTIFICATION

PROJECT/CONTRACT NO.: **Bear Creek High School Site Work Agriculture Complex, Bid Package 0819-8019-1** between the Lodi Unified School District ("District") and _____ ("Contractor" or "Bidder")

("Contract" or "Project").

This Drug-Free Workplace Certification form is required from the successful Bidder pursuant to 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 doing 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.

The District is not a "state agency" as defined in the applicable section(s) of the Government Code, but the District is a local agency and public school district under California law and requires all contractors on District projects to comply with the provisions and requirements of the Drug-Free Workplace Act of 1990.

Contractor must also comply with the provisions of Health & Safety Code section 11362.3 which prohibits the consumption or possession of cannabis or cannabis products in any public place, including school grounds, and specifically on school grounds while children are present.

Contractor shall certify that it will provide a drug-free workplace by doing all of the following:

- a. 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.
- b. Establishing a drug-free awareness program to inform employees about all of the following:
 - (1) The dangers of drug abuse in the workplace.
 - (2) The person's or organization's policy of maintaining a drug-free workplace.
 - (3) The availability of drug counseling, rehabilitation, and employee-assistance programs.
 - (4) The penalties that may be imposed upon employees for drug abuse violations.

- c. Requiring that each employee engaged in the performance of the contract or grant be given a copy of the statement required above, 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 publish a statement notifying employees concerning (a) the prohibition of controlled substance at the workplace, (b) establishing a drug-free awareness program, and (c) requiring that each employee engaged in the performance of the Contract be given a copy of the statement required by section 8355(a), and requiring that the employee agree to abide by the terms of that statement.

I also understand that if the 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 the aforementioned Act.

I acknowledge that I am aware of the provisions of and hereby certify that I will adhere to the requirements of the Drug-Free Workplace Act of 1990 and Health and Safety Code section 11362.3.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

TOBACCO-FREE ENVIRONMENT CERTIFICATION

PROJECT/CONTRACT NO.: **Bear Creek High School Site Work Agriculture Complex, Bid Package 0819-8019-1** between the Lodi Unified School District ("District") and _____ ("Contractor" or "Bidder")

("Contract" or "Project").

This Tobacco-Free Environment Certification form is required from the successful Bidder.

Pursuant to, without limitation, 20 U.S.C. section 6083, Labor Code section 6400 et seq., Health & Safety Code section 104350 et seq., Business and Professions Code section 22950 et seq., and District Board policies, all District sites, including the Project site, are tobacco-free environments. Smoking and the use of tobacco products by all persons is prohibited on or in District property. District property includes school buildings, school grounds, school-owned vehicles and vehicles owned by others while on District property. The prohibition on smoking includes the use of any electronic smoking device that creates an aerosol or vapor, in any manner or in any form, and the use of any oral smoking device for the purpose of circumventing the prohibition of tobacco smoking. Further, Health & Safety Code section 11362.3 prohibits the smoking or use of cannabis or cannabis products in any place where smoking tobacco is prohibited.

I acknowledge that I am aware of the District's policy regarding tobacco-free environments at District sites, including the Project site and hereby certify that I will adhere to the requirements of that policy and not permit any of my firm's employees, agents, subcontractors, or my firm's subcontractors' employees or agents, to use tobacco and/or smoke on the Project site.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

HAZARDOUS MATERIALS CERTIFICATION

PROJECT/CONTRACT NO.: **Bear Creek High School Site Work Agriculture Complex, Bid Package 0819-8019-1** between Lodi Unified School District ("District") and _____ ("Contractor" or "Bidder") ("Contract" or "Project").

1. ☐ Contractor hereby certifies that no asbestos, or asbestos-containing materials, polychlorinated biphenyl (PCB), or any material listed by the federal or state Environmental Protection Agency or federal or state health agencies as a hazardous material, or any other material defined as being hazardous under federal or state laws, rules, or regulations, ("New Hazardous Material"), shall be furnished, installed, or incorporated in any way into the Project or in any tools, devices, clothing, or equipment used to affect any portion of Contractor's work on the Project for District.
2. ☐ Contractor further certifies that it has instructed its employees with respect to the above-mentioned standards, hazards, risks, and liabilities.
3. ☐ Asbestos and/or asbestos-containing material shall be defined as all items containing but not limited to chrysotile, crocidolite, amosite, anthophyllite, tremolite, and actinolite. Any or all material containing greater than one-tenth of one percent (0.1%) asbestos shall be defined as asbestos-containing material.
4. ☐ Any disputes involving the question of whether or not material is New Hazardous Material shall be settled by electron microscopy or other appropriate and recognized testing procedure, at the District's determination. The costs of any such tests shall be paid by Contractor if the material is found to be New Hazardous Material.
5. ☐ All Work or materials found to be New Hazardous Material or Work or material installed with equipment containing New Hazardous Material will be immediately rejected and this Work will be removed at Contractor's expense at no additional cost to the District.
6. ☐ Contractor has read and understood the document titled Hazardous Materials Procedures & Requirements, and shall comply with all the provisions outlined therein.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

LEAD-BASED MATERIALS CERTIFICATION

PROJECT/CONTRACT NO.: **Bear Creek High School Site Work Agriculture Complex, Bid Package 0819-8019-1** between the Lodi Unified School District ("District") and _____ ("Contract" or "Project").

This certification provides notice to the Contractor that:

- (1) Contractor's work may disturb lead-containing building materials.
- (2) Contractor shall notify the District if any work may result in the disturbance of lead-containing building materials.
- (3) Contractor shall comply with the Renovation, Repair and Painting Rule, if lead-based paint is disturbed in a six-square-foot or greater area indoors or a 20-square-foot or greater area outdoors.

1. Lead as a Health Hazard

Lead poisoning is recognized as a serious environmental health hazard facing children today. Even at low levels of exposure, much lower than previously believed, lead can impair the development of a child's central nervous system, causing learning disabilities, and leading to serious behavioral problems. Lead enters the environment as tiny lead particles and lead dust disburse when paint chips, chalks, peels, wears away over time, or is otherwise disturbed. Ingestion of lead dust is the most common pathway of childhood poisoning; lead dust gets on a child's hands and toys and then into a child's mouth through common hand-to-mouth activity. Exposures may result from construction or remodeling activities that disturb lead paint, from ordinary wear and tear of windows and doors, or from friction on other surfaces.

Ordinary construction and renovation or repainting activities carried out without lead-safe work practices can disturb lead-based paint and create significant hazards. Improper removal practices, such as dry scraping, sanding, or water blasting painted surfaces, are likely to generate high volumes of lead dust.

Because the Contractor and its employees will be providing services for the District, and because the Contractor's work may disturb lead-containing building materials, CONTRACTOR IS HEREBY NOTIFIED of the potential presence of lead-containing materials located within certain buildings utilized by the District. All school buildings built prior to 1978 are presumed to contain some lead-based paint until sampling proves otherwise.

2. Overview of California Law

Education Code section 32240 et seq. is known as the Lead-Safe Schools Protection Act. Under this act, the Department of Health Services is to conduct a sample survey of schools in the State of California for the purpose of developing risk factors to predict lead contamination in public schools. (Ed. Code, § 32241.)

Any school that undertakes any action to abate existing risk factors for lead is required to utilize trained and state-certified contractors, inspectors, and workers. (Ed. Code, § 32243, subd. (b).) Moreover, lead-based paint, lead plumbing, and solders, or other potential sources of lead contamination, shall not be utilized in the construction of any new school facility or the modernization or renovation of any existing school facility. (Ed. Code, § 32244.)

Both the Federal Occupational Safety and Health Administration ("Fed/OSHA") and the California Division of Occupational Safety and Health ("Cal/OSHA") have implemented safety orders applicable to all construction work where a contractor's employee may be occupationally exposed to lead.

The OSHA Regulations apply to all construction work where a contractor's employee may be occupationally exposed to lead. The OSHA Regulations contain specific and detailed requirements imposed on contractors subject to those regulations. The OSHA Regulations define construction work as work for construction, alteration, and/or repair, including painting and decorating. Regulated work includes, but is not limited to, the following:

- a. Demolition or salvage of structures where lead or materials containing lead are present;
- b. Removal or encapsulation of materials containing lead;
- c. New construction, alteration, repair, or renovation of structures, substrates, or portions thereof, that contain lead, or materials containing lead;
- d. Installation of products containing lead;
- e. Lead contamination/emergency cleanup;
- f. Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed; and
- g. Maintenance operations associated with the construction activities described in the subsection.

Because it is assumed by the District that all painted surfaces (interior as well as exterior) within the District contain some level of lead, it is imperative that the Contractor, its workers and subcontractors fully and adequately comply with all applicable laws, rules and regulations governing lead-based materials (including title 8, California Code of Regulations, section 1532.1).

Contractor shall notify the District if any Work may result in the disturbance of lead-containing building materials. Any and all Work that may result in the disturbance of lead-containing building materials shall be coordinated through the District. A signed copy of this Certification shall be on file prior to beginning Work on the Project, along with all current insurance certificates.

3. Renovation, Repair and Painting Rule, Section 402(c)(3) of the Toxic Substances Control Act

The EPA requires lead safe work practices to reduce exposure to lead hazards created by renovation, repair and painting activities that disturb lead-based paint. Pursuant to the Renovation, Repair and Painting Rule (RRP), renovations in homes, childcare facilities, and schools built prior to 1978 must be conducted by certified renovations firms, using renovators with training by a EPA-accredited training provider, and fully and adequately complying with all applicable laws, rules and regulations governing lead-based materials, including those rules and regulations appearing within title 40 of the Code of Federal Regulations as part 745 (40 CFR 745).

The RRP requirements apply to all contractors who disturb lead-based paint in a six-square-foot or greater area indoors or a 20-square-foot or greater area outdoors. If a DPH-certified inspector or risk assessor determines that a home constructed before 1978 is lead-free, the federal certification is not required for anyone working on that particular building.

4. Contractor's Liability

If the Contractor fails to comply with any applicable laws, rules, or regulations, and that failure results in a site or worker contamination, the Contractor will be held solely responsible for all costs involved in any required corrective actions, and shall defend, indemnify, and hold harmless the District, pursuant to the indemnification provisions of the Contract, for all damages and other claims arising therefrom.

If lead disturbance is anticipated in the Work, only persons with appropriate accreditation, registrations, licenses, and training shall conduct this Work.

It shall be the responsibility of the Contractor to properly dispose of any and all waste products, including, but not limited to, paint chips, any collected residue, or any other visual material that may occur from the prepping of any painted surface. It will be the responsibility of the Contractor to provide the proper disposal of any hazardous waste by a certified hazardous waste hauler. This company shall be registered with the Department of Transportation (DOT) and shall be able to issue a current manifest number upon transporting any hazardous material from any school site within the District.

The Contractor shall provide the District with any sample results prior to beginning Work, during the Work, and after the completion of the Work. The District may request to examine, prior to the commencement of the Work, the lead training records of each employee of the Contractor.

THE CONTRACTOR HEREBY ACKNOWLEDGES, UNDER PENALTY OF PERJURY, THAT IT:

1. HAS RECEIVED NOTIFICATION OF POTENTIAL LEAD-BASED MATERIALS ON THE OWNER'S PROPERTY;
2. IS KNOWLEDGEABLE REGARDING AND WILL COMPLY WITH ALL APPLICABLE LAWS, RULES, AND REGULATIONS GOVERNING WORK WITH, AND DISPOSAL, OF LEAD.

THE UNDERSIGNED WARRANTS THAT HE/SHE HAS THE AUTHORITY TO SIGN ON BEHALF OF AND BIND THE CONTRACTOR. THE DISTRICT MAY REQUIRE PROOF OF SUCH AUTHORITY.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

IMPORTED MATERIALS CERTIFICATION

PROJECT/CONTRACT NO.: **Bear Creek High School Site Work Agriculture Complex, Bid Package 0819-8019-1** between the Lodi Unified School District ("District") and _____ ("Contractor" or "Bidder")
 ("Contract" or "Project").

This form shall be executed by all entities that, in any way, provide or deliver and/or supply any soils, aggregate, or related materials ("Fill") to the Project Site and shall be provided to the District at least ten (10) days before delivery. All Fill shall satisfy all requirements of any environmental review of the Project performed pursuant to the statutes and guidelines of the California Environmental Quality Act, section 21000 et seq. of the Public Resources Code ("CEQA"), and all requirements of section 17210 et seq. of the Education Code, including requirements for a Phase I environmental assessment acceptable to the State of California Department of Education and Department of Toxic Substances Control.

Certification of: ☐ Delivery Firm/Transporter ☐ Supplier ☐ Manufacturer
☐ Wholesaler ☐ Broker ☐ Retailer
☐ Distributor ☐ Other _____

Type of Entity ☐ Corporation ☐ General Partnership
☐ Limited Partnership ☐ Limited Liability Company
☐ Sole Proprietorship ☐ Other _____

Name of firm ("Firm"): _____

Mailing address: _____

Addresses of branch office used for this Project: _____

If subsidiary, name and address of parent company: _____

By my signature below, I hereby certify that I am aware of section 25260 of the Health and Safety Code and the sections referenced therein regarding the definition of hazardous material. I further certify on behalf of the Firm that all soils, aggregates, or related materials provided, delivered, and/or supplied or that will be provided, delivered, and/or supplied by this Firm to the Project Site are free of any and all hazardous material as defined in section 25260 of the Health and Safety Code. I further certify that I am authorized to make this certification on behalf of the Firm.

Date: _____

Proper Name of Firm: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

CRIMINAL BACKGROUND INVESTIGATION
/FINGERPRINTING CERTIFICATION

PROJECT/CONTRACT NO.: **Bear Creek High School Site Work Agriculture Complex, Bid Package 0819-8019-1** between the Lodi Unified School District ("District") and _____ ("Contractor" or "Bidder")

("Contract" or "Project").

The undersigned does hereby certify to the governing board of the District as follows:

That I am a representative of the Contractor currently under contract with the District; that I am familiar with the facts herein certified; and that I am authorized and qualified to execute this certificate on behalf of Contractor.

Contractor certifies that it has taken at least one of the following actions with respect to the construction Project that is the subject of the Contract (check all that apply):

- ☐ The Contractor is a sole proprietor and intends to comply with the fingerprinting requirements of Education Code section 45125.1(k) with respect to all Contractor's employees who may have contact with District pupils in the course of providing services pursuant to the Contract, and hereby agrees to the District's preparation and submission of fingerprints such that the California Department of Justice may determine that none of those employees has been convicted of a felony, as that term is defined in Education Code section 45122.1. No work shall commence until such determination by DOJ has been made.

As an authorized District official, I am familiar with the facts herein certified, and am authorized to execute this certificate on behalf of the District and undertake to prepare and submit Contractor's fingerprints as if he or she was an employee of the District.

Date: _____

District Representative's Name and Title: _____

District Representative's Signature: _____

- ☐ The Contractor, who is not a sole proprietor, has complied with the fingerprinting requirements of Education Code section 45125.1 with respect to all Contractor's employees and all of its Subcontractors' employees who may have contact with District pupils in the course of providing services pursuant to the Contract, and the California Department of Justice has determined that none of those employees has been convicted of a felony, as that term is defined in Education Code section 45122.1. A complete and accurate list of Contractor's employees and of all of its subcontractors' employees who may come in contact with District pupils during the course and scope of the Contract is attached hereto; and/or
- ☐ Pursuant to Education Code section 45125.2, Contractor has installed or will install, prior to commencement of Work, a physical barrier at the Work Site, that will limit contact between Contractor's employees and District pupils at all times; and/or

- ☐ Pursuant to Education Code section 45125.2, Contractor certifies that all employees will be under the continual supervision of, and monitored by, an employee of the Contractor who the California Department of Justice has ascertained, or as described below, will ascertain, has not been convicted of a violent or serious felony. The name and title of the employee who will be supervising Contractor's and its subcontractors' employees is:

Name: _____

Title: _____

NOTE: If the Contractor is a sole proprietor, and elects the above option, Contractor must have the above-named employee's fingerprints prepared and submitted by the District, in accordance with Education Code section 45125.1(k). No work shall commence until such determination by DOJ has been made.

As an authorized District official, I am familiar with the facts herein certified, and am authorized to execute this certificate on behalf of the District and undertake to prepare and submit Contractor's fingerprints as if he or she was an employee of the District.

Date: _____

District Representative's Name and Title: _____

District Representative's Signature: _____

- ☐ *The Work on the Contract is either (i) at an unoccupied school site and no employee and/or subcontractor or supplier of any tier of the Contract shall come in contact with the District pupils or (ii) Contractor's employees or any subcontractor or supplier of any tier of the Contract will have only limited contact, if any, with District pupils and the District will take appropriate steps to protect the safety of any pupils that may come in contact with Consultant's employees, subcontractors or suppliers so that the fingerprinting and criminal background investigation requirements of Education Code section 45125.1 shall not apply to Contractor under the Contract.*

As an authorized District official, I am familiar with the facts herein certified, and am authorized to execute this certificate on behalf of the District.

Date: _____

District Representative's Name and Title: _____

District Representative's Signature: _____

Contractor's responsibility for background clearance extends to all of its employees, Subcontractors, and employees of Subcontractors coming into contact with District pupils regardless of whether they are designated as employees or acting as independent contractors of the Contractor.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

BUY AMERICAN CERTIFICATION

PROJECT/CONTRACT NO.: **Bear Creek High School Site Work Agriculture Complex, Bid Package 0819-8019-1** between the Lodi Unified School District ("District") and _____ ("Contractor" or "Bidder")

("Contract" or "Project").

Federal regulations require that all of the iron, steel, and manufactured goods used in projects for the construction, installation, repairs, renovation, modernization, or maintenance of a public building or public work funded in part or in whole by federal stimulus funds, with the exception of projects funded by Qualified School Construction Bonds, be produced in the United States of America, unless a federal department waives this requirement because (1) it is inconsistent with the public interest, (2) the goods are not produced in sufficient quantities or of satisfactory quality in the United States, or (3) the requirement would increase the cost of the Project overall by more than twenty-five percent (25%) ("Buy American").

Contractor shall submit this Certification with its executed agreement, identifying the steps Contractor will take to use goods produced in the United States of America in carrying out this Contract. Bidder should not submit this form with its bid.

Contractor shall retain a copy of this form and may be subject to a future audit.

CERTIFICATION

On behalf of Contractor, I represent and covenant that Contractor will use on the Project only iron, steel and manufactured goods produced in the United States of America except goods for which a federal department has waived this requirement.

I, _____, certify that I am the Contractor's _____ and that the representations and covenants made herein are true and correct. In making this certification, I am aware of section 12650 et seq. of the Government Code providing for the imposition of treble damages for making false claims.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

DOCUMENT 00 45 46.10

ROOFING PROJECT CERTIFICATION

Not Used.

END OF DOCUMENT

REGISTERED SUBCONTRACTORS LIST
(Labor Code Section 1771.1)

PROJECT: **Bear Creek High School Site Work Agriculture Complex, Bid Package 0819-8019-1**

Date Submitted (for Updates): _____

Contractor acknowledges and agrees that it must clearly set forth below the name and Department of Industrial Relations (DIR) registration number of each subcontractor **for all tiers** who will perform work or labor or render service to Contractor or its subcontractors in or about the construction of the Work **at least two (2) weeks before the subcontractor is scheduled to perform work**. This document is to be updated as all tiers of subcontractors are identified.

Contractor acknowledges and agrees that, if Contractor fails to list as to any subcontractor of any tier who performs any portion of Work, the Contract is subject to cancellation and the Contractor will be subjected to penalty under applicable law.

If further space is required for the list of proposed subcontractors, attach additional copies of page 2 showing the required information, as indicated below.

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

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DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Subcontractor Name: _____

DIR Registration #: _____

Portion of Work: _____

Date: _____

Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

POST BID INTERVIEW

PART 1 - GENERAL

1.01 SUMMARY

If requested by the District, this Section requires the apparent low bidder to attend and participate in a Post Bid Interview with the Construction Manager, prior to award of any contract by the District. The Post Bid Interview will be scheduled by the Construction Manager within three (3) calendar days after the date of bid.

1.02 REQUIRED ATTENDANCE

- A. A duly authorized representative of the apparent low bidder is required to attend the Post Bid Interview, in person.
- B. The apparent low bidder's authorized representative(s) must have (1) knowledge of how the bid submitted was prepared, (2) the person responsible for supervising performance of the Work, and (3) the authority to bind the apparent low bidder.
- C. Failure to attend the Post Bid Interview as scheduled will be considered just cause for the District to reject the Bid as nonresponsive.

1.03 POST BID INTERVIEW PROCEDURE

- A. The Construction Manager will review the Bid with the attendees.
- B. The Construction Manager will review the Contract Documents with the attendees, including but not limited to:
 - (1) Insurance
 - (2) Bonding
 - (3) Addenda
 - (4) Pre-Bid Clarifications
 - (5) Scope of Work
 - (6) Bid Packages Descriptions
 - (7) Bid Alternates
 - (8) Contract Plans
 - (9) Contract Specifications
 - (10) Project Schedule and Schedule Requirements

- (11) Critical Dates Requirement for Other Bid Packages
- (12) Prevailing Wage Requirements
- (13) Liquidated Damages
- (14) Required Documentation for Contract Administration
- (15) Contract Coordination Requirements

1.04 ☐ POST BID INTERVIEW DOCUMENTATION

The Construction Manager will document the Post Bid Interview on the form attached to this Section. Both the apparent low bidder and the Construction Manager are required to sign the Post Bid Interview Documentation.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

POST BID INTERVIEW

CONSTRUCTION MANAGER

[Name]

[Address 1]

[Address 2]

[Phone]

[Fax]

BIDDER: _____

DATE: _____ TIME: _____ PHONE: _____

I. INTRODUCTIONS:

A. Present

CONTRACTOR

CONTRACTOR

[CM]

[CM]

II. PROPOSED CONTRACT:

III. PURPOSE OF INTERVIEW IS TO ASSURE A MUTUAL UNDERSTANDING OF THE FOLLOWING:

- | | | |
|----------------------------------------------------------------------------------------------------------------|-----|----|
| A. Do you acknowledge submission of a complete and accurate bid? | Yes | No |
| B. Do you acknowledge the Bid Document submittal timelines after NOA and NTP and can you meet those timelines? | Yes | No |
| C. Do you acknowledge the requirements for the escrow of bid documents? | Yes | No |
| D. Are you comfortable with your listed subcontractors? | Yes | No |

IV. CONTRACTUAL REQUIREMENTS:

- | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| A. Do you understand you are a prime contractor? | Yes | No |
| B. Can you meet specified insurance requirements? | Yes | No |
| 1. Do any of your policies that require Additional Insured endorsements exceed the minimum coverage requirements? | Yes | No |
| 2. Are you requesting that the District accept an Excess Liability Insurance Policy to meet the policy limit? | Yes | No |
| 3. Will there be a gap between the per occurrence amount of any underlying policy and the start of the coverage under the Umbrella or Excess Liability Insurance Policy? | Yes | No |

C.	Will you provide the Performance Bond and Labor and Material Bond for 100% of the Contract Price as stipulated?	Yes	No
1.	Cost for bonds: _____%	Yes	No
2.	Is the cost of your bonds in your base bid?	Yes	No
3.	Is your surety licensed to issue bonds in California?	Yes	No
D.	Do you understand the fingerprinting requirements?	Yes	No
E.	Is it understood that all workers must be paid prevailing wage?	Yes	No
F.	Is it understood that all subcontractors of every tier must be registered as a public works contractor with the Department of Industrial Relations?	Yes	No
V. SCOPE OF WORK:			
A.	Acknowledged Receipt of Addenda #1-__	Yes	No
B.	Are the costs for addenda items included in your bid? (if applicable)	Yes	No
C.	Do you have a complete understanding of your Scope of Work under the proposed Agreement?	Yes	No
D.	You have re-reviewed the documents and understand the Scope of the Work. Are there any items that require clarification?	Yes	No
If yes, please identify them.			
1.	_____		

2.	_____		

3.	_____		

	Is (are) there additional cost(s) for the above item(s)?	Yes	No
E.	Is the cost for allowance included in your bid?	Yes	No
F.	Have you reviewed bid alternative(s) #1-____? (if applicable)	Yes	No
G.	Are the costs for bid alternatives included in your bid?	Yes	No
H.	Are the plans and specifications clear and understandable to your satisfaction?	Yes	No

- I. Do you acknowledge that the time to submit notice of requests for substitution of specified materials has expired? Yes No
- VI. SCHEDULE:
- A. Do you acknowledge and agree to the stipulated completion dates and milestones in the contract? Yes No
1. Will you provide a detailed construction schedule to _____ within the required ten (10) days of the Notice to Proceed, per the contract? Yes No
2. Can you meet the submittal deadline? Yes No
3. It is understood that the Project schedule is critical and that that weekend and overtime work may be required to meet the milestones. Yes No
4. It is understood that if rain does occur, then all dewatering and protection of work is required, per the contract. Yes No
If not, what do you believe must change and why? _____

- B. Identify critical materials, deliveries, long lead items and other dependencies, including Owner Furnished items that could affect the completion of your work. Yes No
1. _____
2. _____
3. _____
4. _____
5. _____
- C. Do you understand that there is going to be maintenance and other construction taking place on site during the course of the project? Yes No
- VII. EXECUTION OF WORK
- A. Do you understand the access to the site? Yes No
- B. Do you understand the staging area restrictions? Yes No
- C. Have you included protection of [asphalt, floors, and roofs]? Yes No

D. Do you understand that the site is occupied by students, teachers, administrators, parents, etc.? Yes No

VIII. CONTRACTOR COMMENTS/SUGGESTIONS:

1. _____
2. _____
3. _____
4. _____
5. _____

IX. CONTRACTOR

You agree the information contained herein is part of your contractual obligations. Your signature acknowledges your agreement to perform all Work in the Contract Documents, and that costs for all Work are included in your bid.

The foregoing information is true and accurate, and I am authorized to sign as an officer of the company I am representing.

[Company Name]

Signature _____ Title: _____

Date: _____

X. CONSTRUCTION MANAGER

Signature _____ Title: _____

Date: _____

Title of Document: POST BID INTERVIEW

Number of Pages: _____

Date of Document: _____

END OF DOCUMENT

NOTICE OF AWARD

Dated: _____ 20__

To: _____ (Contractor)

To: _____
(Address)

From: Governing Board ("Board") of the Lodi Unified School District ("District")

Re: **Bear Creek High School Site Work Agriculture Complex**, Bid Package, Project No. **0819-8019-1** ("Project").

Contractor has been awarded the Contract for the above-referenced Project on _____, 20__, by action of the District's Board.

The Contract Price is _____ Dollars (\$_____), and includes alternates _____.

Three (3) copies of each of the Contract Documents (except Drawings) accompany this Notice of Award. Three (3) sets of the Drawings will be delivered separately or otherwise made available. Additional copies are available at cost of reproduction.

You must comply with the following conditions precedent within **SEVEN (7)** calendar days of the date of this Notice of Award.

The Contractor shall execute and submit the following documents by 5:00 p.m. of the **SEVENTH (7th)** calendar day following the date of the Notice of Award.

- a. Agreement: To be executed by successful Bidder. Submit three (3) copies, each bearing an original signature.
- b. Escrow of Bid Documentation: This must include all required documentation. See the document titled Escrow Bid Documentation for more information.
- c. Performance Bond (100%): On the form provided in the Contract Documents and fully executed as indicated on the form.
- d. Payment Bond (Contractor's Labor & Material Bond) (100%): On the form provided in the Contract Documents and fully executed as indicated on the form.
- e. Insurance Certificates and Endorsements as required.
- f. Workers' Compensation Certification.
- g. Prevailing Wage and Related Labor Requirements Certification.
- h. Disabled Veteran Business Enterprise Participation Certification.

- i. Drug-Free Workplace Certification.
- j. Tobacco-Free Environment Certification.
- k. Hazardous Materials Certification.
- l. Lead-Based Materials Certification.
- m. Imported Materials Certification.
- n. Criminal Background Investigation/Fingerprinting Certification.

Failure to comply with these conditions within the time specified will entitle District to consider your bid abandoned, to annul this Notice of Award, and to declare your Bid Security forfeited, as well as any other rights the District may have against the Contractor.

After you comply with those conditions, District will return to you one fully signed counterpart of the Agreement.

LODI UNIFIED SCHOOL DISTRICT

BY: _____

NAME: _____

TITLE: _____

END OF DOCUMENT

AGREEMENT

THIS AGREEMENT IS MADE AND ENTERED INTO THIS _____ DAY OF _____
_____, 20____, by and between the Lodi Unified School District ("District") and _____
_____ ("Contractor") ("Agreement").

WITNESSETH: That the parties hereto have mutually covenanted and agreed, and by these presents do covenant and agree with each other, as follows:

1. ☐ **The Work:** Contractor agrees to furnish all tools, equipment, apparatus, facilities, labor, and material necessary to perform and complete in a good and workmanlike manner, the work of the following project:

Bear Creek High School Site Work Agriculture Complex, Bid Package 0819-8019-1 ("Project" or "Contract" or "Work")

It is understood and agreed that the Work shall be performed and completed as required in the Contract Documents including, without limitation, the Drawings and Specifications and submission of all documents required to secure funding or by the Division of the State Architect for close-out of the Project, under the direction and supervision of, and subject to the approval of, the District or its authorized representative.

2. ☐ **The Contract Documents:** The complete Contract consists of all Contract Documents as defined in the General Conditions and incorporated herein by this reference. Any and all obligations of the District and Contractor are fully set forth and described in the Contract Documents. All Contract Documents are intended to cooperate so that any Work called for in one and not mentioned in the other or vice versa is to be executed the same as if mentioned in all Contract Documents.
3. ☐ **Interpretation of Contract Documents:** Should any question arise concerning the intent or meaning of Contract Documents, including the Drawings or Specifications, the question shall be submitted to the District for interpretation. If a conflict exists in the Contract Documents, valid, written modifications, beginning with the most recent, shall control over this Agreement (if any), which shall control over the Special Conditions, which shall control over any Supplemental Conditions, which shall control over the General Conditions, which shall control over the remaining Division 0 documents, which shall control over Division 1 Documents which shall control over Division 2 through Division 49 documents, which shall control over figured dimensions, which shall control over large-scale drawings, which shall control over small-scale drawings. In no case shall a document calling for lower quality and/or quantity material or workmanship control. The decision of the District in the matter shall be final.
4. ☐ **Time for Completion:** It is hereby understood and agreed that the Work under this Contract shall be completed within Ninety (90) consecutive calendar days ("Contract Time") from the date specified in the District's Notice to Proceed.
5. ☐ **Completion - Extension of Time:** Should the Contractor fail to complete this Contract, and the Work provided herein, within the time fixed for completion, due

allowance being made for the contingencies provided for herein, the Contractor shall become liable to the District for all loss and damage that the District may suffer on account thereof. The Contractor shall coordinate its Work with the Work of all other contractors. The District shall not be liable for delays resulting from Contractor's failure to coordinate its Work with other contractors in a manner that will allow timely completion of Contractor's Work. Contractor shall be liable for delays to other contractors caused by Contractor's failure to coordinate its Work with the Work of other contractors.

6. **Liquidated Damages:** Time is of the essence for all work under this Agreement. It is hereby understood and agreed that it is and will be difficult and/or impossible to ascertain and determine the actual damage that the District will sustain in the event of and by reason of Contractor's delay; therefore, Contractor agrees that it shall pay to the District the sum of Five Hundred dollars (\$500.00) per day as liquidated damages for each and every day's delay beyond the time herein prescribed in finishing the Work.

It is hereby understood and agreed that this amount is not a penalty.

In the event that any portion of the liquidated damages is not paid to the District, the District may deduct that amount from any money due or that may become due the Contractor under this Agreement, and such deduction does not constitute a withholding or penalty. The District's right to assess liquidated damages is as indicated herein and in the General Conditions.

The time during which the Contract is delayed for cause, as hereinafter specified, may extend the time of completion for a reasonable time as the District may grant, provided that Contractor has complied with the claims procedure of the Contract Documents. This provision does not exclude the recovery of damages by either party under other provisions in the Contract Documents.

7. **Loss Or Damage:** The District and its agents and authorized representatives shall not in any way or manner be answerable or suffer loss, damage, expense, or liability for any loss or damage that may happen to the Work, or any part thereof, or in or about the same during its construction and before acceptance, and the Contractor shall assume all liabilities of every kind or nature arising from the Work, either by accident, negligence, theft, vandalism, or any cause whatsoever; and shall hold the District and its agents and authorized representatives harmless from all liability of every kind and nature arising from accident, negligence, or any cause whatsoever.
8. **Insurance and Bonds:** Prior to issuance of the Notice to Proceed by the District, Contractor shall provide all required certificates of insurance, insurance endorsements, and payment and performance bonds as evidence thereof.
9. **Prosecution of Work:** If the Contractor should neglect to prosecute the Work properly or fail to perform any provisions of this Contract, the District, may, pursuant to the General Conditions and without prejudice to any other remedy it may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor.
10. **Authority of Architect, Project Inspector, and DSA:** Contractor hereby acknowledges that the Architect(s), the Project Inspector(s), and the Division of the State Architect ("DSA") have authority to approve and/or suspend Work if the

Contractor's Work does not comply with the requirements of the Contract Documents, Title 24 of the California Code of Regulations, and all applicable laws and regulations. The Contractor shall be liable for any delay caused by its non-compliant Work.

11. ☐ **Assignment of Contract:** Neither the Contract, nor any part thereof, nor any moneys due or to become due thereunder, may be assigned by the Contractor without the prior written approval of the District, nor without the written consent of the Surety on the Contractor's Performance Bond (the "Surety"), unless the Surety has waived in writing its right to notice of assignment.
12. ☐ **Classification of Contractor's License:** Contractor hereby acknowledges that it currently holds valid Type A and/or B Contractor's license(s) issued by the State of California, Contractors' State License Board, in accordance with division 3, chapter 9, of the Business and Professions Code and in the classification called for in the Contract Documents.
13. ☐ **Registration as Public Works Contractor:** The Contractor and all Subcontractors currently are registered as public works contractors with the Department of Industrial Relations, State of California, in accordance with Labor Code section 1771.1.
14. ☐ **Payment of Prevailing Wages:** The Contractor and all Subcontractors shall pay all workers on all Work performed pursuant to this Contract not less than the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work as determined by the Director of the Department of Industrial Relations, State of California, for the type of work performed and the locality in which the work is to be performed within the boundaries of the District, pursuant to sections 1770 et seq. of the California Labor Code.
15. ☐ This Project is subject to labor compliance monitoring and enforcement by the Department of Industrial Relations pursuant to Labor Code section 1771.4 and Title 8 of the California Code of Regulations. Contractor specifically acknowledges and understands that it shall perform the Work of this Agreement while complying with all the applicable provisions of Division 2, Part 7, Chapter 1, of the Labor Code, including, without limitation, the requirement that the Contractor and all of its Subcontractors shall timely submit complete and accurate electronic certified payroll records as required by the Contract Documents, or the District may not issue payment.
16. ☐ **Contract Price:** In consideration of the foregoing covenants, promises, and agreements on the part of the Contractor, and the strict and literal fulfillment of each and every covenant, promise, and agreement, and as compensation agreed upon for the Work and construction, erection, and completion as aforesaid, the District covenants, promises, and agrees that it will well and truly pay and cause to be paid to the Contractor in full, and as the full Contract Price and compensation for construction, erection, and completion of the Work hereinabove agreed to be performed by the Contractor, the following price:

_____ Dollars
(\$ _____),

in lawful money of the United States, which sum is to be paid according to the schedule provided by the Contractor and accepted by the District and subject to additions and deductions as provided in the Contract. This amount supersedes any previously stated and/or agreed to amount(s).

- 17.□ No Representations:** No representations have been made other than as set forth in writing in the Contract Documents, including this Agreement. Each of the Parties to this Agreement warrants that it has carefully read and understood the terms and conditions of this Agreement and all Contract Documents, and that it has not relied upon the representations or advice of any other Party or any attorney not its own.
- 18.□ Entire Agreement:** The Contract Documents, including this Agreement, set forth the entire agreement between the parties hereto and fully supersede any and all prior agreements, understandings, written or oral, between the parties hereto pertaining to the subject matter thereof.
- 19.□ Severability:** If any term, covenant, condition, or provision in any of the Contract Documents is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remainder of the provisions in the Contract Documents shall remain in full force and effect and shall in no way be affected, impaired, or invalidated thereby.

IN WITNESS WHEREOF, accepted and agreed on the date indicated above:

CONTRACTOR

LODI UNIFIED SCHOOL DISTRICT

By: _____

By: _____

Title: _____

Title: _____

NOTE: If the party executing this Contract is a corporation, a certified copy of the by-laws, or of the resolution of the Board of Directors, authorizing the officers of said corporation to execute the Contract and the bonds required thereby must be attached hereto.

END OF DOCUMENT

NOTICE TO PROCEED

Dated: _____, 20____

TO: _____
("Contractor")

ADDRESS: _____

PROJECT: _____

PROJECT/CONTRACT NO.: **Bear Creek High School Site Work Agriculture Complex, Bid Package 0819-8019-1** between the Lodi Unified School District and Contractor ("Contract").

You are notified that the Contract Time under the above Contract will commence to run on _____, 20____. By that date, you are to start performing your obligations under the Contract Documents. In accordance with the Agreement executed by Contractor, the date of completion is _____, 20____.

You must submit the following documents by 5:00 p.m. of the TENTH (10th) calendar day following the date of this Notice to Proceed:

- a. Contractor's preliminary schedule of construction.
- b. Contractor's preliminary schedule of values for all of the Work.
- c. Contractor's preliminary schedule of submittals, including Shop Drawings, Product Data, and Samples submittals
- d. Contractor's Safety Plan specifically adapted for the Project.
- e. Registered Subcontractors List: A complete subcontractors list for all tiers, including the name, address, telephone number, email address, facsimile number, California State Contractors License number, license classification, Department of Industrial Relations registration number, and monetary value of all Subcontracts.

Thank you. We look forward to a very successful Project.

LODI UNIFIED SCHOOL DISTRICT

BY: _____

NAME: _____

TITLE: _____

END OF DOCUMENT

ESCROW BID DOCUMENTATION

1.□ Requirement to Escrow Bid Documentation

- a. Contractor shall submit, within **SEVEN (7)** calendar days after the date of the Notice of Award, one copy of all documentary information received or generated by Contractor in preparation of bid prices for this Contract, as specified herein. This material is referred to herein as "Escrow Bid Documentation." The Escrow Bid Documentation of the Contractor will be held in escrow for the duration of the Contract.
- b. Contractor agrees, as a condition of award of the Contract, that the Escrow Bid Documentation constitutes all written information used in the preparation of its bid, and that no other written bid preparation information shall be considered in resolving disputes or claims. Contractor also agrees that nothing in the Escrow Bid Documentation shall change or modify the terms or conditions of the Contract Documents.
- c. The Escrow Bid Documentation will not be opened by District except as indicated herein. The Escrow Bid Documentation will be used only for the resolution of change orders and claims disputes.
- d. Contractor's submission of the Escrow Bid Documentation, as with the bonds and insurance documents required, is considered an essential part of the Contract award. Should the Contractor fail to make the submission within the allowed time specified above, District may deem the Contractor to have failed to enter into the Contract, and the Contractor shall forfeit the amount of its bid security, accompanying the Contractor's bid, and District may award the Contract to the next lowest responsive responsible bidder.
- e. NO PAYMENTS WILL BE MADE, NOR WILL DISTRICT ACCEPT PROPOSED CHANGE ORDERS UNTIL THE ABOVE REQUIRED INFORMATION IS SUBMITTED AND APPROVED.
- f. The Escrow Bid Documentation shall be submitted in person by an authorized representative of the Contractor to the District.

2.□ Ownership of Escrow Bid Documentation

- a. The Escrow Bid Documentation is, and shall always remain, the property of Contractor, subject to review by District, as provided herein.
- b. Escrow Bid Documentation constitute trade secrets, not known outside Contractor's business, known only to a limited extent and only by a limited number of employees of Contractor, safeguarded while in Contractor's possession, extremely valuable to Contractor, and could be extremely valuable to Contractor's competitors by virtue of reflecting Contractor's contemplated techniques of construction. Subject to the provisions herein, District agrees to safeguard the Escrow Bid Documentation, and all

information contained therein, against disclosure to the fullest extent permitted by law.

3.□ Format and Contents of Escrow Bid Documentation

- a. Contractor may submit Escrow Bid Documentation in its usual cost-estimating format; a standard format is not required. The Escrow Bid Documentation shall be submitted in the language (e.g., English) of the specification.
- b. Escrow Bid Documentation must clearly itemize the estimated costs of performing the work of each bid item contained in the bid schedule, separating bid items into sub-items as required to present a detailed cost estimate and allow a detailed cost review. The Escrow Bid Documentation shall include all subcontractor bids or quotes, supplier bids or quotes, quantity takeoffs, crews, equipment, calculations of rates of production and progress, copies of quotes from subcontractors and suppliers, and memoranda, narratives, add/deduct sheets, and all other information used by the Contractor to arrive at the prices contained in the bid proposal. Estimated costs should be broken down into Contractor's usual estimate categories such as direct labor, repair labor, equipment ownership and operation, expendable materials, permanent materials, and subcontract costs as appropriate. Plant and equipment and indirect costs should be detailed in the Contractor's usual format. The Contractor's allocation of indirect costs, contingencies, markup, and other items to each bid item shall be identified.
- c. All costs shall be identified. For bid items amounting to less than \$10,000, estimated unit costs are acceptable without a detailed cost estimate, provided that labor, equipment, materials, and subcontracts, as applicable, are included and provided that indirect costs, contingencies, and markup, as applicable, are allocated.
- d. Bid Documentation provided by District should not be included in the Escrow Bid Documentation unless needed to comply with the following requirements.

4.□ Submittal of Escrow Bid Documentation

- a. The Escrow Bid Documentation shall be submitted by the Contractor in a sealed container within **SEVEN (7)** calendar days after the date of the Notice of Award. The container shall be clearly marked on the outside with the Contractor's name, date of submittal, project name and the words "Escrow Bid Documentation – Intended to be opened in the presence of Authorized Representatives of Both District and Contractor".
- b. By submitting Escrow Bid Documentation, Contractor represents that the material in the Escrow Bid Documentation constitutes all the documentary information used in preparation of the bid and that the Contractor has personally examined the contents of the Escrow Bid Documentation container and has found that the documents in the container are complete.

- c. If Contractor's proposal is based upon subcontracting any part of the work, each subcontractor whose total subcontract price exceeds 5 percent of the total contract price proposed by Contractor, shall provide separate Escrow Documents to be included with those of Contractor. Those documents shall be opened and examined in the same manner and at the same time as the examination described above for Contractor.
- d. If Contractor wishes to subcontract any portion of the Work after award, District retains the right to require Contractor to submit Escrow Documents for the Subcontractor before the subcontract is approved.

5.□ Storage, Examination and Final Disposition of Escrow Bid Documentation

- a. The Escrow Bid Documentation will be placed in escrow, for the life of the Contract, in a mutually agreeable institution. The cost of storage will be paid by Contractor for the duration of the project until final Contract payment. The storage facilities shall be the appropriate size for all the Escrow Bid Documentation and located conveniently to both District's and Contractor's offices.
- b. The Escrow Bid Documentation shall be examined by both District and Contractor, at any time deemed necessary by either District or Contractor, to assist in the negotiation of price adjustments and change orders or the settlement of disputes and claims. In the case of legal proceedings, Escrow Bid Documentation shall be used subject to the terms of an appropriate protective order if requested by Contractor and ordered by a court of competent jurisdiction. Examination of the Escrow Bid Documentation is subject to the following conditions:
 - (1) As trade secrets, the Escrow Bid Documentation is proprietary and confidential to the extent allowed by law.
 - (2) District and Contractor shall each designate, in writing to the other party **SEVEN (7)** calendar days prior to any examination, the names of representatives who are authorized to examine the Escrow Bid Documentation. No other person shall have access to the Escrow Bid Documentation.
 - (3) Access to the documents may take place only in the presence of duly designated representatives of the District and Contractor. If Contractor fails to designate a representative or appear for joint examination on **SEVEN (7)** calendar days' notice, then the District representative may examine the Escrow Bid Documents alone upon an additional **THREE (3)** calendar days' notice if a representative of the Contractor does not appear at the time set.
 - (4) If a subcontractor has submitted sealed information to be included in the Escrow Bid Documents, access to those documents may take place only in the presence of a duly designated representative of the District, Contractor and that subcontractor. If that subcontractor fails to designate a representative or appear for joint examination on **SEVEN (7)** calendar days' notice, then the District representative and/or the

Contractor may examine the Escrow Bid Documentation without that subcontractor present upon an additional **THREE (3)** calendar days' notice if a representative of that subcontractor does not appear at the time set.

- c. The Escrow Bid Documentation will be returned to Contractor at such time as the Contract has been completed and final settlement has been achieved.

END OF DOCUMENT

ESCROW AGREEMENT IN LIEU OF RETENTION
(Public Contract Code Section 22300)

(Note: Contractor must use this form.)

This Escrow Agreement in Lieu of Retention ("Escrow Agreement") is made and entered into this _____ day of _____, 20____, by and between the Lodi Unified School District ("District"), whose address is 880 N Guild Ave , Lodi , California 95240 , and _____ ("Contractor"), whose address is _____, and _____ ("Escrow Agent"), a state or federally chartered bank in the state of California, whose address is _____.

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

1. Pursuant to section 22300 of Public Contract Code of the State of California, which is hereby incorporated by reference, Contractor has the following two (2) options:
 - ☐ Deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by District pursuant to the Construction Contract No. _____ entered into between District and Contractor for the _____ Project, in the amount of _____ Dollars (\$_____) dated, _____, 20____, (the "Contract"); **or**
 - ☐ On written request of Contractor, District shall make payments of the retention earnings for the above referenced Contract directly to Escrow Agent.

When Contractor deposits the securities as a substitute for Contract earnings (first option), Escrow Agent shall notify District within ten (10) calendar days of the deposit. The market value of the securities at the time of substitution and at all times from substitution until the termination of the Escrow Agreement shall be at least equal to the cash amount then required to be withheld as retention under the terms of the Contract between District and Contractor.

Securities shall be held in the name of Lodi Unified School District, and shall designate Contractor as beneficial owner.

2. District shall make progress payments to Contractor for those funds which otherwise would be withheld from progress payments pursuant to Contract provisions, provided that Escrow Agent holds securities in form and amount specified above.
3. When District makes payment of retentions earned directly to Escrow Agent, Escrow Agent shall hold them for the benefit of Contractor until the time that the escrow created under this Escrow Agreement is terminated. Contractor may direct the investment of the payments into securities. All terms and conditions of this Escrow Agreement and the rights and responsibilities of the Parties shall be equally applicable and binding when District pays 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 District. The District will charge Contractor \$_____ for each of District's deposits to the escrow account. These expenses and payment terms shall be determined by District, Contractor, and Escrow Agent.
5. Interest earned on securities or money market accounts held in escrow and all interest earned on that interest shall be for sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to District.
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 District to Escrow Agent that District consents to withdrawal of amount sought to be withdrawn by Contractor.
7. District shall have the right to draw upon the securities and/or withdraw amounts from the Escrow Account in the event of default by Contractor. Upon seven (7) days' written notice to Escrow Agent from District of the default, if applicable, Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by District. Escrow Agent shall not be authorized to determine the validity of any notice of default given by District pursuant to this paragraph, and shall promptly comply with District's instructions to pay over said escrowed assets. Escrow Agent further agrees to not interplead the escrowed assets in response to a conflicting demand.
8. Upon receipt of written notification from District certifying that the Contract is final and complete, and that 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 monies and securities on deposit and payments of fees and charges.
9. Escrow Agent shall rely on written notifications from District and Contractor pursuant to Paragraphs 5 through 8, inclusive, of this Escrow Agreement and District and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of securities and interest as set forth above.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

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

On behalf of District:

Title

Name

Signature

Address

On behalf of Contractor:

Title

Name

Signature

Address

On behalf of Escrow Agent:

Title

Name

Signature

Address

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

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

On behalf of District:

Title

Name

Signature

Address

On behalf of Contractor:

Title

Name

Signature

Address

END OF DOCUMENT

PERFORMANCE BOND
(100% of Contract Price)

(Note: Contractor must use this form, NOT a surety company form.)

KNOW ALL PERSONS BY THESE PRESENTS:

WHEREAS, the governing board ("Board") of the Lodi Unified School District, ("District") and _____ ("Principal") have entered into a contract for the furnishing of all materials and labor, services and transportation, necessary, convenient, and proper to perform the following project:

Bear Creek High School Site Work Agriculture Complex, Bid Package 0819-8019-1

("Project" or "Contract") which Contract dated _____, 20____, and all of the Contract Documents attached to or forming a part of the Contract, are hereby referred to and made a part hereof; and

WHEREAS, said Principal is required under the terms of the Contract to furnish a bond for the faithful performance of the Contract.

NOW, THEREFORE, the Principal and _____ ("Surety") are held and firmly bound unto the Board of the District in the penal sum of _____

Dollars (\$_____), lawful money of the United States, for the payment of which sum well and truly to be made we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally, firmly by these presents, to:

- Promptly perform all the work required to complete the Project; and
- Pay to the District all damages the District incurs as a result of the Principal's failure to perform all the Work required to complete the Project.

Or, at the District's sole discretion and election, the Surety shall obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by the District of the lowest responsible bidder, arrange for a contract between such bidder and the District and make available as Work progresses sufficient funds to pay the cost of completion less the "balance of the Contract Price," and to pay and perform all obligations of Principals 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 District under the Contract and any modifications thereto, less the amount previously paid by the District to the Principal, less any withholdings by the District allowed under the Contract. District shall not be required or obligated to accept a tender of a completion contractor from the Surety for any or no reason.

The condition of the obligation is such that, if the above bound Principal, its 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 the Contract and any alteration

thereof made as therein provided, on its part to be kept and performed at the time and in the intent and meaning, including all contractual guarantees and warranties of materials and workmanship, and shall indemnify and save harmless the District, its trustees, officers and agents, as therein stipulated, then this obligation shall become null and void, otherwise it shall be and remain in full force and virtue.

Surety expressly agrees that the District may reject any contractor or subcontractor proposed by Surety to fulfill its obligations in the event of default by the Principal. Surety shall not utilize Principal in completing the Work nor shall Surety accept a Bid from Principal for completion of the Work if the District declares the Principal to be in default and notifies Surety of the District's objection to Principal's further participation in the completion of the Work.

As a condition precedent to the satisfactory completion of the Contract, the above obligation shall hold good for a period equal to the warranty and/or guarantee period of the Contract, during which time Surety's obligation shall continue if Contractor shall fail to make full, complete, and satisfactory repair and replacements and totally protect the District from loss or damage resulting from or caused by defective materials or faulty workmanship. The obligations of Surety hereunder shall continue so long as any obligation of Contractor remains. Nothing herein shall limit the District's rights or the Contractor or Surety's obligations under the Contract, law or equity, including, but not limited to, California Code of Civil Procedure section 337.15.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligation on this bond. The Surety also stipulates and agrees that it shall not be exonerated or released from the obligation of this bond by any overpayment or underpayment by the District that is based upon estimates approved by the Architect. The Surety does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the Contract or to the work or to the specifications.

IN WITNESS WHEREOF, two (2) identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by the Principal and Surety above named, on the _____ day of _____, 20____.

Principal	Surety
By	By
	Name of California Agent of Surety
	Address of California Agent of Surety
	Telephone No. of California Agent of Surety

Contractor must attach a Notarial Acknowledgment for all Surety's signatures and a Power of Attorney and Certificate of Authority for Surety. The California Department of Insurance must authorize the Surety to be an admitted surety insurer.

END OF DOCUMENT

PAYMENT BOND
Contractor's Labor & Material Bond
(100% Of Contract Price)

(Note: Contractor must use this form, NOT a surety company form.)

KNOW ALL PERSONS BY THESE PRESENTS:

WHEREAS, the governing board ("Board") of the Lodi Unified School District, ("District") and _____, ("Principal") have entered into a contract for the furnishing of all materials and labor, services and transportation, necessary, convenient, and proper to perform the following project:

Bear Creek High School Site Work Agriculture Complex, Bid Package 0819-8019-1

("Project" or "Contract") which Contract dated _____, 20____, and all of the Contract Documents attached to or forming a part of the Contract, are hereby referred to and made a part hereof; and

WHEREAS, pursuant to law and the Contract, the Principal is required, before entering upon the performance of the work, to file a good and sufficient bond with the body by which the Contract is awarded in an amount equal to one hundred percent (100%) of the Contract price, to secure the claims to which reference is made in sections 9000 through 9510 and 9550 through 9566 of the Civil Code, and division 2, part 7, of the Labor Code.

NOW, THEREFORE, the Principal and _____ ("Surety") are held and firmly bound unto all laborers, material men, and other persons referred to in said statutes in the sum of _____ Dollars (\$_____), lawful money of the United States, being a sum not less than the total amount payable by the terms of Contract, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, or assigns, jointly and severally, by these presents.

The condition of this obligation is that if the Principal or any of its subcontractors, or their heirs, executors, administrators, successors, or assigns of any, all, or either of them shall fail to pay for any labor, 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 required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of the Principal or any of his or its subcontractors of any tier under Section 13020 of the Unemployment Insurance Code with respect to such work or labor, that the Surety will pay the same in an amount not exceeding the amount herein above set forth, and also in case suit is brought upon this bond, will pay a reasonable attorney's fee to be awarded and fixed by the court, and to be taxed as costs and to be included in the judgment therein rendered.

It is hereby expressly stipulated and agreed that this bond shall inure to the benefit of any and all persons, companies, and corporations entitled to file claims under section 9100 of the Civil Code, so as to give a right of action to them or their assigns in any suit brought upon this bond.

Should the condition of this bond be fully performed, then this obligation shall become null and void; otherwise it shall be and remain in full force and affect.

And the Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of Contract or the specifications accompanying the same shall in any manner affect its obligations on this bond, and it does hereby waive notice of any such change, extension, alteration, or addition.

IN WITNESS WHEREOF, two (2) identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by the Principal and Surety above named, on the _____ day of _____, 20____.

Principal	Surety
By	By
	Name of California Agent of Surety
	Address of California Agent of Surety
	Telephone No. of California Agent of Surety

Contractor must attach a Notarial Acknowledgment for all Surety's signatures and a Power of Attorney and Certificate of Authority for Surety. The California Department of Insurance must authorize the Surety to be an admitted surety insurer.

END OF DOCUMENT

ALLOWANCE EXPENDITURE DIRECTIVE FORM

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

**ALLOWANCE
EXPENDITURE
DIRECTIVE NO.:**

ALLOWANCE EXPENDITURE DIRECTIVE

Project: _____

Date: _____

Bid No.: _____

DSA File No.: _____

DSA Appl. No.: _____

The following parties agree to the terms of this Allowance Expenditure Directive ("AED"):

Owner Name, Address, Telephone:

Contractor Name, Address, Telephone:

Reference	Description	Allowance Authorized for Expenditure	Days Ext.
Request for AED # Requested by: Performed by: Reason:	[Description of unforeseen item relating to Work] [Requester] [Performer] [Reason]	\$	
Request for AED # Requested by: Performed by: Reason:	[Description of unforeseen item relating to Work] [Requester] [Performer] [Reason]	\$	
Request for AED # Requested by: Performed by: Reason:	[Description of unforeseen item relating to Work] [Requester] [Performer] [Reason]	\$	

Contract time will be adjusted as follows:	Total Contract Allowance Amount:	\$
Previous Completion Date: __[DATE]__	Amount of Previously Approved Allowance Expenditure Directive(s):	\$

_____ [#] _____ Calendar Days Extension (zero days unless otherwise indicated) Current Completion Date: ____ [DATE] ____	Amount of this Allowance Expenditure Directive:	\$
------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------	----

The undersigned Contractor approves the foregoing release of allowance for completion of each specified item, and as to the extension of time allowed, if any, for completion of the entire work as stated therein, and agrees to furnish all labor, materials and services and perform all work necessary to complete any additional work specified for the consideration stated therein ("Work"). Submission of sums which have no basis in fact or which Contractor knows are false 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.

This Allowance Expenditure Directive must be signed by an authorized District representative.

It is expressly understood that the authorized allowance expenditure and time, if any, granted herein represent a full accord and satisfaction for any and all time and cost impacts of the items herein, and Contractor waives any and all further compensation or time extension based on the items herein. The value of the extra work or changes expressly includes any and all of the Contractor's costs and expenses, and its subcontractors, 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.

Signatures:

DISTRICT: LODI UNIFIED SCHOOL DISTRICT Date: _____ By: _____ [Print Name and Title here]	CONTRACTOR: _____ Date: _____ By: _____ [Print Name and Title here]
ARCHITECT: _____ Date: _____ By: _____ [Print Name and Title here]	PROJECT INSPECTOR: _____ Date: _____ By: _____ [Print Name and Title here]

END OF DOCUMENT

PROPOSED CHANGE ORDER FORM

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

PCO NO.:

Project: _____
Bid No.: _____
RFI #: _____

Date: _____
DSA File No.: _____
DSA Appl. No.: _____

Contractor hereby submits for District's review and evaluation this Proposed Change Order ("PCO"), submitted in accordance with and subject to the terms of the Contract Documents, including Sections 17.7 and 17.8 of the General Conditions. Any spaces left blank below are deemed no change to cost or time.

Contractor understands and acknowledges that documentation supporting Contractor's PCO must be attached and included for District review and evaluation. Contractor further understands and acknowledges that failure to include documentation sufficient to, in District's discretion, support some or all of the PCO, shall result in a rejected PCO.

	<u>WORK PERFORMED OTHER THAN BY CONTRACTOR</u>	<u>ADD</u>	<u>DEDUCT</u>
(a)	<u>Material</u> (attach suppliers' invoice or itemized quantity and unit cost plus sales tax)		
(b)	<u>Add Labor</u> (attach itemized hours and rates, fully encumbered)		
(c)	<u>Add Equipment</u> (attach suppliers' invoice)		
(d)	<u>Subtotal</u>		
(e)	<u>Add overhead and profit for any and all tiers of Subcontractor</u> , the total not to exceed ten percent (10%) of Item (d)		
(f)	<u>Subtotal</u>		
(g)	<u>Add Overhead and Profit for Contractor</u> , not to exceed five percent (5%) of Item (f)		
(h)	<u>Subtotal</u>		
(i)	<u>Add Bond and Insurance</u> , not to exceed one and a half percent (1.5%) of Item (h)		
(j)	<u>TOTAL</u>		
(k)	<u>Time</u> (zero unless indicated; "TBD" not permitted)	____ Calendar Days	

[REMAINDER OF PAGE LEFT BLANK INTENTIONALLY]

	WORK PERFORMED BY CONTRACTOR	ADD	DEDUCT
(a)	Material (attach itemized quantity and unit cost plus sales tax)		
(b)	Add Labor (attach itemized hours and rates, fully encumbered)		
(c)	Add Equipment (attach suppliers' invoice)		
(d)	Subtotal		
(e)	Add Overhead and Profit for Contractor , not to exceed fifteen percent (15%) of Item (d)		
(f)	Subtotal		
(g)	Add Bond and Insurance , not to exceed one and a half percent (1.5%) of Item (f)		
(h)	TOTAL		
(i)	Time (zero unless indicated; "TBD" not permitted)	Calendar Days	

The undersigned Contractor approves the foregoing as to the changes, if any, to the Contract Price specified for each item, and as to the extension of time allowed, if any, for completion of the entire Work as stated herein, and agrees to furnish all labor, materials, and service, and perform all work necessary to complete any additional work specified for the consideration stated herein. Submission of sums which have no basis in fact or which Contractor knows are false 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.* It is understood that the changes herein to the Contract shall only be effective when approved by the governing board of the District.

It is expressly understood that the value of the extra Work or changes expressly includes any and all of the Contractor's costs and expenses, direct and indirect, resulting from additional time required on the Project or resulting from delay to the Project. Contractor is not entitled to separately recover amounts for overhead or other indirect costs. Any costs, expenses, damages, or time extensions not included are deemed waived.

SUBMITTED BY:

Contractor:

[Name]

Date

END OF DOCUMENT

CHANGE ORDER FORM

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

CHANGE ORDER NO.:
CHANGE ORDER

Project: _____
Bid No.: _____

Date: _____
DSA File No.: _____
DSA Appl. No.: _____

The following parties agree to the terms of this Change Order:

Owner: _____
[Name / Address]

Contractor: _____
[Name / Address]

Architect: _____
[Name / Address]

Project Inspector: _____
[Name / Address]

Reference	Description	Cost	Days Ext.
PCO # Requested by: Performed by: Reason:	[Description of change] [Requester] [Performer] [Reason]	\$	
PCO # Requested by: Performed by: Reason:	[Description of change] [Requester] [Performer] [Reason]	\$	
PCO # Requested by: Performed by: Reason:	[Description of change] [Requester] [Performer] [Reason]	\$	
Contract time will be adjusted as follows:		Original Contract Amount:	\$
Previous Completion Date: __[Date]		Amount of Previously Approved Change Order(s):	\$
_____[#] Calendar Days Extension (zero unless otherwise indicated)		Amount of this Change Order:	\$
Current Completion Date: __[Date]		Contract Amount:	\$

The undersigned Contractor approves the foregoing as to the changes, if any, to the Contract Price specified for each item, and as to the extension of time allowed, if any, for

**LODI UNIFIED SCHOOL DISTRICT
BEAR CREEK HIGH SCHOOL SITE WORK**

**CHANGE ORDER FORM
DOCUMENT 00 63 63-1**

completion of the entire work as stated therein, and agrees to furnish all labor, materials and services and perform all work necessary to complete any additional work specified for the consideration stated therein. Submission of sums which have no basis in fact or which Contractor knows are false 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.

This change order is subject to approval by the governing board of this District and must be signed by the District. Until such time as this change order is approved by the District's governing board and executed by a duly authorized District representative, this change order is not effective and not binding.

It is expressly understood that the compensation and time, if any, granted herein represent a full accord and satisfaction for any and all time and cost impacts of the items herein, and Contractor waives any and all further compensation or time extension based on the items herein. The value of the extra work or changes expressly includes any and all of the Contractor's costs and expenses, and its subcontractors, 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.

Signatures:

District:

Contractor:

[Name]

Date

[Name]

Date

Architect:

Project Inspector:

[Name]

Date

[Name]

Date

END OF DOCUMENT

AGREEMENT AND RELEASE OF ANY AND ALL CLAIMS

THIS AGREEMENT AND RELEASE OF CLAIMS ("Agreement and Release") IS MADE AND ENTERED INTO THIS _____ DAY OF _____, 20____ by and between the Lodi Unified School District ("District") and _____ ("Contractor"), whose place of business is _____.

RECITALS

WHEREAS, District and Contractor entered into PROJECT/CONTRACT NO.: _____ ("Contract" or "Project") in the County of San Joaquin, California; and

WHEREAS, the Work under the Contract was completed on _____, and a Notice of Completion was recorded with the County Recorder on _____.

NOW, THEREFORE, it is mutually agreed between District and Contractor as follows:

AGREEMENT AND RELEASE

1. Contractor will only be assessed liquidated damages as detailed below:

Original Contract Sum \$ _____

Modified Contract Sum \$ _____

Payment to Date \$ _____

Liquidated Damages \$ _____

Payment Due Contractor \$ _____

2. Subject to the provisions hereof, District shall forthwith pay to Contractor the undisputed sum of _____ Dollars (\$ _____) under the Contract, less any amounts represented by any notice to withhold funds on file with District as of the date of such payment.
3. Contractor acknowledges and hereby agrees that there are no unresolved or outstanding claims in dispute against District arising from the performance of work under the Contract, except for the claims described in Paragraph 5 and continuing obligations described in Paragraph 6. It is the intention of the parties in executing this Agreement and Release that this Agreement and Release shall be effective as a full, final and general release of all claims, demands, actions, causes of action, obligations, costs, expenses, damages, losses and liabilities of Contractor against District and all of its respective agents, employees, trustees, inspectors, assignees, consultants and transferees, except for any Disputed Claim that may be set forth in Paragraph 6 and the continuing obligations described in Paragraph 8 hereof.

4. The following claims are disputed (hereinafter, the "Disputed Claims") and are specifically excluded from the operation of this Agreement and Release:

<u>Claim No.</u>	<u>Description of Claim</u>	<u>Amount of Claim</u>	<u>Date Claim Submitted</u>
_____	_____	\$ _____	_____
_____	_____	\$ _____	_____
_____	_____	\$ _____	_____
_____	_____	\$ _____	_____
_____	_____	\$ _____	_____
_____	_____	\$ _____	_____

[If further space is required, attach additional sheets showing the required information.]

5. Consistent with California Public Contract Code section 7100, Contractor hereby agrees that, in consideration of the payment set forth in Paragraph 1 hereof, Contractor hereby releases and forever discharges District, all its agents, employees, inspectors, assignees, and transferees from any and all liability, claims, demands, actions, or causes of action of whatever kind or nature arising out of or in any way concerned with the Work under the Contract.
6. Guarantees and warranties for the Work, and any other continuing obligation of Contractor, including without limitation the duty to defend, indemnify and hold harmless the District, shall remain in full force and effect as specified in the Contract Documents.
7. Contractor hereby waives the provisions of California Civil Code section 1542 which provides as follows:

A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS THAT THE CREDITOR OR RELEASING PARTY DOES NOT KNOW OR SUSPECT TO EXIST IN HIS OR HER FAVOR AT THE TIME OF EXECUTING THE RELEASE AND THAT, IF KNOWN BY HIM OR HER, WOULD HAVE MATERIALLY AFFECTED HIS OR HER SETTLEMENT WITH THE DEBTOR OR RELEASED PARTY.

8. The provisions of this Agreement and Release are contractual in nature and not mere recitals and shall be considered independent and severable. If any such provision or any part thereof shall be at any time held invalid in whole or in part under any federal, state, county, municipal, or other law, ruling, or regulations, then such provision, or part thereof, shall remain in force and effect to the extent permitted by law, and the remaining provisions of this Agreement and Release shall also remain in full force and effect, and shall be enforceable.

9. All rights of District shall survive completion of the Work or termination of Contract, and execution of this Release.

* * * CAUTION: THIS IS A RELEASE - READ BEFORE EXECUTING * * *

LODI UNIFIED SCHOOL DISTRICT

Signature: _____

Print Name: _____

Title: _____

CONTRACTOR: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

GUARANTEE FORM

_____ ("Contractor") hereby agrees that the _____
_____ ("Work" of Contractor) which Contractor has installed for the Lodi Unified
School District ("District") for the following project:

**PROJECT: Bear Creek High School Site Work Agriculture Complex, Bid
Package 0819-8019-1**

("Project" or "Contract") has been performed in accordance with the requirements of the
Contract Documents and that the Work as installed will fulfill the requirements of the
Contract Documents.

The undersigned agrees to repair or replace any or all of such Work that may prove to be
defective in workmanship or material together with any other adjacent Work that may be
displaced in connection with such replacement within a period of t year(s) from the date of
completion as defined in Public Contract Code section 7107, subdivision (c), ordinary wear
and tear and unusual abuse or neglect excepted. The date of completion is
_____, 20____.

In the event of the undersigned's failure to comply with the above-mentioned conditions
within a reasonable period of time, as determined by the District, but not later than seven
(7) days after being notified in writing by the District, the undersigned authorizes the
District to proceed to have said defects repaired and made good at the expense of the
undersigned. The undersigned shall pay the costs and charges therefor upon demand.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

Representatives to be contacted for service subject to terms of Contract:

Name: _____

Address: _____

Phone No.: _____

Email: _____

END OF DOCUMENT

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GENERAL CONDITIONS

1. CONTRACT TERMS AND DEFINITIONS

1.1 Definitions

Wherever used in the Contract Documents, the following terms shall have the meanings indicated, which shall be applicable to both the singular and plural thereof:

1.1.1 Adverse Weather: Shall be only weather that satisfies all of the following conditions: (1) unusually severe precipitation, sleet, snow, hail, or extreme temperature conditions in excess of the norm for the location and time of year it occurred based on the closest weather station data averaged over the past five years, (2) that is unanticipated and would cause unsafe work conditions and/or is unsuitable for scheduled work that should not be performed during inclement weather (i.e., exterior finishes), and (3) at the Project.

1.1.2 Allowance Expenditure Directive: Written authorization for expenditure of allowance, if any.

1.1.3 Approval, Approved, and/or Accepted: Written authorization, unless stated otherwise.

1.1.4 Architect (or "Design Professional in General Responsible Charge"): The individual, partnership, corporation, joint venture, or any combination thereof, named as Architect, who will have the rights and authority assigned to the Architect in the Contract Documents. The term Architect means the Design Professional in General Responsible Charge as defined in DSA PR 13-02 on this Project or the Architect's authorized representative.

1.1.5 As-Builts: Reproducible blue line prints of drawings to be prepared on a monthly basis pursuant to the Contract Documents, that reflect changes made during the performance of the Work, recording differences between the original design of the Work and the Work as constructed since the preceding monthly submittal. See **Record Drawings**.

1.1.6 Bidder: A contractor who intends to provide a proposal to the District to perform the Work of this Contract.

1.1.7 Change Order: A written order to the Contractor authorizing an addition to, deletion from, or revision in the Work, and/or authorizing an adjustment in the Contract Price or Contract Time.

1.1.8 Claim: A Dispute that remains unresolved at the conclusion of the all the applicable Dispute Resolution requirements provided herein.

1.1.9 Construction Change Directive: A written order prepared and issued by the District, the Construction Manager, and/or the Architect and signed by the District and the Architect, directing a change in the Work.

1.1.10 Construction Manager: The individual, partnership, corporation, joint venture, or any combination thereof, or its authorized representative, named as such by the District. If no Construction Manager is used on the Project that is the subject of this Contract, then all references to Construction Manager herein shall be read to refer to District.

1.1.11 Construction Schedule: The progress schedule of construction of the Project as provided by Contractor and approved by District.

1.1.12 Contract, Contract Documents: The Contract consists exclusively of the documents evidencing the agreement of the District and Contractor, identified as the Contract Documents. The Contract Documents consist of the following documents:

- 1.1.12.1** Notice to Bidders
- 1.1.12.2** Instructions to Bidders
- 1.1.12.3** Bid Form and Proposal
- 1.1.12.4** Bid Bond
- 1.1.12.5** Designated Subcontractors List
- 1.1.12.6** Site Visit Certification (if a site visit was required)
- 1.1.12.7** Non-Collusion Declaration
- 1.1.12.8** Notice of Award
- 1.1.12.9** Notice to Proceed
- 1.1.12.10** Agreement
- 1.1.12.11** Escrow of Bid Documentation
- 1.1.12.12** Escrow Agreement for Security Deposits in Lieu of Retention (if applicable)
- 1.1.12.13** Performance Bond
- 1.1.12.14** Payment Bond (Contractor's Labor & Material Bond)
- 1.1.12.15** General Conditions
- 1.1.12.16** Special Conditions (if applicable)
- 1.1.12.17** Project Labor Agreement (if applicable)
- 1.1.12.18** Hazardous Materials Procedures and Requirements
- 1.1.12.19** Workers' Compensation Certification
- 1.1.12.20** Prevailing Wage Certification
- 1.1.12.21** Disabled Veteran Business Enterprise Participation Certification (if applicable)
- 1.1.12.22** Drug-Free Workplace Certification (if applicable)
- 1.1.12.23** Tobacco-Free Environment Certification
- 1.1.12.24** Hazardous Materials Certification (if applicable)
- 1.1.12.25** Lead-Based Materials Certification (if applicable)
- 1.1.12.26** Imported Materials Certification (if applicable)
- 1.1.12.27** Criminal Background Investigation/Fingerprinting Certification
- 1.1.12.28** Buy American Certification (if applicable)
- 1.1.12.29** Roofing Project Certification (if applicable)
- 1.1.12.30** Registered Subcontractors List
- 1.1.12.31** Iran Contracting Act Certification (if applicable)
- 1.1.12.32** Post Bid Interview
- 1.1.12.33** All Plans, Technical Specifications, and Drawings
- 1.1.12.34** Any and all addenda to any of the above documents
- 1.1.12.35** Any and all change orders or written modifications to the above documents if approved in writing by the District

1.1.13□ Contract Price: The total monies payable to the Contractor under the terms and conditions of the Contract Documents.

1.1.14□ Contract Time: The time period stated in the Agreement for the completion of the Work.

1.1.15□ Contractor: The person or persons identified in the Agreement as contracting to perform the Work to be done under this Contract, or the legal representative of such a person or persons.

1.1.16□ Daily Job Report(s): Daily Project reports prepared by the Contractor's employee(s) who are present on Site, which shall include the information required herein.

1.1.17□ Day(s): Unless otherwise designated, day(s) means calendar day(s).

1.1.18□ Department of Industrial Relations (or "DIR"): is responsible, among other things, for labor compliance monitoring and enforcement of California prevailing wage laws and regulations for public works contracts.

1.1.19□ Design Professional in General Responsible Charge: See definition of **Architect** above.

1.1.20□ Dispute: A separate demand by Contractor for a time extension, or 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 Contractor is not otherwise entitled to; or an amount of payment disputed by the District.

1.1.21□ District: The public agency or the school district for which the Work is performed. The governing board of the District or its designees will act for the District in all matters pertaining to the Contract. The District may, at any time,

1.1.21.1□ Direct the Contractor to communicate with or provide notice to the Construction Manager or the Architect on matters for which the Contract Documents indicate the Contractor will communicate with or provide notice to the District; and/or

1.1.21.2□ Direct the Construction Manager or the Architect to communicate with or direct the Contractor on matters for which the Contract Documents indicate the District will communicate with or direct the Contractor.

1.1.22□ Drawings (or "Plans"): The graphic and pictorial portions of the Contract Documents showing the design, location, scope and dimensions of the work, generally including plans, elevations, sections, details, schedules, sequence of operation, and diagrams.

1.1.23□ DSA: Division of the State Architect.

1.1.24□ Force Account Directive: A process that may be used when the District and the Contractor cannot agree on a price for a specific portion of work or before the Contractor prepares a price for a specific portion of work and whereby the Contractor performs the work as indicated herein on a time and materials basis.

1.1.25□ Job Cost Reports: Any and all reports or records detailing the costs associated with work performed on or related to the Project that Contractor shall maintain for the Project. Specifically, Job Cost Reports shall contain, but are not limited by or to, the following information: a description of the work performed or to be performed on the Project; quantity, if applicable, of work performed (hours, square feet, cubic yards, pounds, etc.) for the Project; Project budget; costs for the Project to date; estimated costs to complete the Project; and expected costs at completion. The Job Cost Reports shall also reflect all Contract cost codes, change orders, elements of non-conforming work, back charges, and additional services.

1.1.26□ Labor Commissioner's Office (or "Labor Commissioner", also known as the Division of Labor Standards Enforcement ("DLSE")): Division of the DIR responsible for adjudicating wage claims, investigating discrimination and public works complaints, and enforcing Labor Code statutes and Industrial Welfare Commission orders.

1.1.27□ Municipal Separate Storm Sewer System (or "MS4"): A system of conveyances used to collect and/or convey storm water, including, without limitation, catch basins, curbs, gutters, ditches, man-made channels, and storm drains.

1.1.28□ Plans: See **Drawings**.

1.1.29□ Premises: The real property owned by the District on which the Site is located.

1.1.30□ Product(s): New material, machinery, components, equipment, fixtures and systems forming the Work, including existing materials or components required and approved by the District for reuse.

1.1.31□ Product Data: 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.

1.1.32□ Program Manager: The individual, partnership, corporation, joint venture, or any combination thereof, or its authorized representative, named as such by the District. If no Program Manager is designated for Project that is the subject of this Contract, then all references to Project Manager herein shall be read to refer to District.

1.1.33□ Project: The planned undertaking as provided for in the Contract Documents.

1.1.34□ Project Inspector (or "Inspector"): The individual(s) retained by the District in accordance with title 24 of the California Code of Regulations to monitor and inspect the Project.

1.1.35□ Project Labor Agreement (or "PLA"): a prehire collective bargaining agreement in accordance with Public Contract Code section 2500 et seq. that establishes terms and conditions of employment for a specific construction project or projects and/or is an agreement described in Section 158(f) of Title 29 of the United States Code.

1.1.36□ Proposed Change Order (or "PCO"): a written request prepared by the Contractor requesting that the District and the Architect issue a Change Order based upon a proposed change to the Work.

1.1.37□ Provide: Shall include "provide complete in place," that is, "furnish and install," and "provide complete and functioning as intended in place" unless specifically stated otherwise.

1.1.38□ Qualified SWPPP Practitioners (or "QSP"): certified personnel that attended a State Water Resources Control Board sponsored or approved training class and passed the qualifying exam.

1.1.39□ Record Drawings: Reproducible drawings (or Plans) prepared pursuant to the requirements of the Contract Documents that reflect all changes made during the performance of the Work, recording differences between the original design of the Work and the Work as constructed upon completion of the Project. See also **As-Builts**.

1.1.40□ Request for Information (or "RFI"): A written request prepared by the Contractor requesting that the Architect provide additional information necessary to clarify or amplify an item in the Contract Documents that the Contractor believes is not clearly shown or called for in the Drawings or Specifications or other portions of the Contract Documents, or to address problems that have arisen under field conditions.

1.1.41□ Request for Substitution for Specified Item: A request by Contractor to substitute an equal or superior material, product, thing, or service for a specific material, product, thing, or service that has been designated in the Contract Documents by a specific brand or trade name.

1.1.42□ Safety Orders: Written and/or verbal orders for construction issued by the California Division of Occupational Safety and Health ("CalOSHA") or by the United States Occupational Safety and Health Administration ("OSHA").

1.1.43□ Safety Plan: Contractor's safety plan specifically adapted for the Project. Contractor's Safety Plan shall comply with all provisions regarding Project safety, including all applicable provisions in these General Conditions.

1.1.44□ Samples: Physical examples that illustrate materials, products, equipment, finishes, colors, or workmanship and that, when approved in accordance with the Contract Documents, establish standards by which portions of the Work will be judged.

1.1.45□ Shop Drawings: All drawings, prints, diagrams, illustrations, brochures, schedules, and other data that are prepared by the Contractor, a subcontractor, manufacturer, supplier, or distributor, that illustrate how specific portions of the Work shall be fabricated or installed.

1.1.46□ Site: The Project site as shown on the Drawings.

1.1.47□ Specifications: That portion of the Contract Documents, Division 1 through Division 49, and all technical sections, and addenda to all of these, if any,

consisting of written descriptions and requirements of a technical nature of materials, equipment, construction methods and systems, standards, and workmanship.

1.1.48 ☐ **State:** The State of California.

1.1.49 ☐ **Storm Water Pollution Prevention Plan (or "SWPPP"):** A document which identifies sources and activities at a particular facility that may contribute pollutants to storm water and contains specific control measures and time frames to prevent or treat such pollutants.

1.1.50 ☐ **Subcontractor:** A contractor and/or supplier who is under contract with the Contractor or with any other subcontractor, regardless of tier, to perform a portion of the Work of the Project.

1.1.51 ☐ **Submittal Schedule:** The schedule of submittals as provided by Contractor and approved by District.

1.1.52 ☐ **Surety:** The person, firm, or corporation that executes as surety the Contractor's Performance Bond and Payment Bond, and must be a California admitted surety insurer as defined in the Code of Civil Procedure section 995.120.

1.1.53 ☐ **Work:** All labor, materials, equipment, components, appliances, supervision, coordination, and services required by, or reasonably inferred from, the Contract Documents, that are necessary for the construction and completion of the Project.

1.2 ☐ **Laws Concerning the Contract**

Contract is subject to all provisions of the Constitution and laws of California and the United States governing, controlling, or affecting District, or the property, funds, operations, or powers of District, and such provisions are by this reference made a part hereof. Any provision required by law to be included in this Contract shall be deemed to be inserted.

1.3 ☐ **No Oral Agreements**

No oral agreement or conversation with any officer, agent, or employee of District, either before or after execution of Contract, shall affect or modify any of the terms or obligations contained in any of the documents comprising the Contract.

1.4 ☐ **No Assignment**

Contractor shall not assign this Contract or any part thereof including, without limitation, any services or money to become due hereunder without the prior written consent of the District. Assignment without District's prior written consent shall be null and void. Any assignment of money due or to become due under this Contract shall be subject to a prior lien for services rendered or material supplied for performance of work called for under this Contract in favor of all persons, firms, or corporations rendering services or supplying material to the extent that claims are filed pursuant to the Civil Code, Code of Civil Procedure, Government Code, Labor Code, and/or Public Contract Code, and shall also be subject to deductions for liquidated damages or withholding of payments as determined by District in accordance with this Contract. Contractor shall not assign or

transfer in any manner to a Subcontractor or supplier the right to prosecute or maintain an action against the District.

1.5 Notice and Service Thereof

1.5.1 Any notice from one party to the other or otherwise under Contract shall be in writing and shall be dated and signed by the party giving notice or by a duly authorized representative of that party. Any notice shall not be effective for any purpose whatsoever unless served in one of the following manners:

1.5.1.1 If notice is given by personal delivery thereof, it shall be considered delivered on the day of delivery.

1.5.1.2 If notice is given by overnight delivery service, it shall be considered delivered one (1) day after date deposited, as indicated by the delivery service.

1.5.1.3 If notice is given by depositing same in United States mail, enclosed in a sealed envelope, it shall be considered delivered three (3) days after date deposited, as indicated by the postmarked date.

1.5.1.4 If notice is given by registered or certified mail with postage prepaid, return receipt requested, it shall be considered delivered on the day the notice is signed for.

1.5.1.5 Electronic mail may be used for convenience but is not a substitute for the notice and service requirements herein.

1.6 No Waiver

The failure of District in any one or more instances to insist upon strict performance of any of the terms of this Contract or to exercise any option herein conferred shall not be construed as a waiver or relinquishment to any extent of the right to assert or rely upon any such terms or option on any future occasion. No action or failure to act by the District, Architect, or Construction Manager shall constitute a waiver of any right or duty afforded the District under the Contract, nor shall any action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

1.7 Substitutions for Specified Items

Unless the Special Conditions contain different provisions, Contractor shall not substitute different items for any items identified in the Contract Documents without prior written approval of the District.

1.8 Materials and Work

1.8.1 Except as otherwise specifically stated in this Contract, Contractor shall provide and pay for all materials, labor, tools, equipment, transportation, supervision, temporary constructions of every nature, and all other services, management, and facilities of every nature whatsoever necessary to execute and complete this Contract, in a good and workmanlike manner, within the Contract Time.

1.8.2 □ Unless otherwise specified, all materials shall be new and of the best quality of their respective kinds and grades as noted or specified, workmanship shall be of good quality, and Contractor shall use all diligence to inform itself fully as to the required manufacturer's instructions and to comply therewith.

1.8.3 □ Materials shall be furnished in ample quantities and at such times as to insure uninterrupted progress of Work and shall be stored properly and protected from the elements, theft, vandalism, or other loss or damage as required.

1.8.4 □ For all materials and equipment specified or indicated in the Drawings, the Contractor shall provide all labor, materials, equipment, and services necessary for complete assemblies and complete working systems, functioning as intended. Incidental items not indicated on 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 here 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.

1.8.5 □ Contractor shall, after award of Contract by District and after relevant submittals have been approved, place orders for materials and/or equipment as specified so that delivery of same may be made without delays to the Work. Contractor shall, upon demand from District, present documentary evidence showing that orders have been placed.

1.8.6 □ District reserves the right but has no obligation, in response to Contractor's neglect or failure in complying with the above instructions, to place orders for such materials and/or equipment as the District may deem advisable in order that the Work may be completed at the date specified in the Agreement, and all expenses incidental to the procuring of said materials and/or equipment shall be paid for by Contractor or deducted from payment(s) to Contractor.

1.8.7 □ Contractor warrants good title to all material, supplies, and equipment installed or incorporated in Work and agrees upon completion of all Work to deliver the Site to District, together with all improvements and appurtenances constructed or placed thereon by it, and free from any claims, 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 the Contract shall have any right to lien any portion of the Premises or any improvement or appurtenance thereon, except that Contractor may install metering devices or other equipment of utility companies or of political subdivision, title to which is commonly retained by utility company or political subdivision. In the event of installation of any such metering device or equipment, Contractor shall advise District as to owner thereof.

1.8.7.1 □ If a lien or a claim based on a stop payment notice of any nature should at any time be filed against the Work or any District property, by any entity that 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 a claim based on a stop payment notice to be released or discharged immediately therefrom.

1.8.7.2 □ If the Contractor fails to furnish to the District within ten (10) calendar days after demand by the District, satisfactory evidence that a lien or a claim based on a stop payment notice has been so released, discharged, or secured, the 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.

1.8.8 □ Nothing contained in this Article, however, shall defeat or impair the rights of persons furnishing materials or labor under any bond given by Contractor for their protection or any rights under any law permitting such protection or any rights under any law permitting such persons to look to funds due Contractor in hands of District (e.g., stop payment notices), and this provision shall be inserted in all subcontracts and material contracts and notice of its provisions shall be given to all persons furnishing material for work when no formal contract is entered into for such material.

1.8.9 □ Title to new materials and/or equipment for the Work of this Contract and attendant liability for its protection and safety shall remain with Contractor until incorporated in the Work of this Contract and accepted by District. No part of any materials and/or equipment shall be removed from its place of storage except for immediate installation in the Work of this Contract. Should the District, in its discretion, allow the Contractor to store materials and/or equipment for the Work off-site, Contractor will store said materials and/or equipment at a bonded warehouse and with appropriate insurance coverage at no cost to District. Contractor shall keep an accurate inventory of all materials and/or equipment in a manner satisfactory to District or its authorized representative and shall, at the District's request, forward it to the District.

2. □ [RESERVED]

3. □ ARCHITECT

3.1 The Architect shall represent the District during the Project and will observe the progress and quality of the Work on behalf of the District. Architect shall have the authority to act on behalf of District to the extent expressly provided in the Contract Documents and to the extent determined by District. Architect shall have authority to reject materials, workmanship, and/or the Work whenever rejection may be necessary, in Architect's reasonable opinion, to insure the proper execution of the Contract.

3.2 Architect shall, with the District and on behalf of the District, determine the amount, quality, acceptability, and fitness of all parts of the Work, and interpret the Specifications, Drawings, and shall, with the District, interpret all other Contract Documents.

3.3 Architect shall have all authority and responsibility established by law, including title 24 of the California Code of Regulations.

3.4 Contractor shall provide District and the Construction Manager with a copy of all written communication between Contractor and Architect at the same time as that communication is made to Architect, including, without limitation, all RFIs, correspondence, submittals, claims, and proposed change orders.

4. CONSTRUCTION MANAGER

4.1 If a Construction Manager is used on this Project ("Construction Manager" or "CM"), the Construction Manager will provide administration of the Contract on the District's behalf. After execution of the Contract and Notice to Proceed, all correspondence and/or instructions from Contractor and/or District shall be forwarded through the Construction Manager. The Construction Manager will not be responsible for and will not have control or charge of construction means, methods, techniques, sequences, or procedures or for safety precautions in connection with the Work, which shall all remain the Contractor's responsibility.

4.2 The Construction Manager, however, will have authority to reject materials and/or workmanship not conforming to the Contract Documents, as determined by the District, the Architect, and/or the Project Inspector. The Construction Manager shall also have the authority to require special inspection or testing of any portion of the Work, whether it has been fabricated, installed, or fully completed. Any decision made by the Construction Manager, in good faith, shall not give rise to any duty or responsibility of the Construction Manager to: the Contractor; any Subcontractor; the Contractor or Subcontractor's respective agents, employees; or other persons performing any of the Work. The Construction Manager shall have free access to any or all parts of Work at any time.

4.3 If the District does not use a Construction Manager on this Project, all references to Construction Manager or CM shall be read as District.

5. INSPECTOR, INSPECTIONS, AND TESTS

5.1 Project Inspector

5.1.1 One or more Project Inspector(s), including special Project Inspector(s), as required, will be assigned to the Work by District, in accordance with requirements of title 24, part 1, of the California Code of Regulations, to enforce the building code and monitor compliance with Plans and Specifications for the Project previously approved by the DSA. Duties of Project Inspector(s) are specifically defined in section 4-342 of said part 1 of title 24.

5.1.2 No Work shall be carried on except with the knowledge and under the inspection of the Project Inspector(s). The Project Inspector(s) shall have free access to any or all parts of Work at any time. Contractor shall furnish Project Inspector(s) reasonable opportunities for obtaining such information as may be necessary to keep Project Inspector(s) fully informed respecting progress and manner of work and character of materials, including, but not limited to, submission of form DSA 156 (or the most current version applicable at the time the Work is performed) to the Project Inspector at least 48 hours in advance of the commencement and completion of construction of each and every aspect of the Work. Forms are available on the DSA's website at: <http://www.dgs.ca.gov/dsa/Forms.aspx>. Inspection of Work shall not relieve Contractor from an obligation to fulfill this Contract. Project Inspector(s) and the DSA are authorized to suspend work whenever the Contractor and/or its Subcontractor(s) are not complying with the Contract Documents. Any work stoppage by the Project Inspector(s) and/or DSA shall be without liability to the District. Contractor shall instruct its Subcontractors and employees accordingly.

5.1.3 □ If Contractor and/or any Subcontractor requests that the Project Inspector(s) perform any inspection off-site, this shall only be done if it is allowable pursuant to applicable regulations and DSA approval, if the Project Inspector(s) agree to do so, and at the expense of the Contractor.

5.2 □ **Tests and Inspections**

5.2.1 □ Tests and Inspections shall comply with title 24, part 1, California Code of Regulations, group 1, article 5, section 4-335, and with the provisions of the Specifications.

5.2.2 □ The District will select an independent testing laboratory to conduct the tests. Selection of the materials required to be tested shall be by the laboratory or the District's representative and not by the Contractor. The Contractor shall notify the District's representative a sufficient time in advance of its readiness for required observation or inspection.

5.2.3 □ The Contractor shall notify the District's representative 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 District may arrange for the testing of same at the source of supply. This notice shall be provided, at a minimum, seventy-two (72) hours prior to the manufacture of the material that needs to be tested.

5.2.4 □ 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 representative that such testing and inspection will not be required, shall not be incorporated into and/or onto the Project.

5.2.5 □ The District will select the testing laboratory and pay for the cost of all tests and inspections. Contractor shall reimburse the District for any and all laboratory costs or other testing costs for any materials found to be not in compliance with the Contract Documents. At the District's discretion, District may elect to deduct laboratory or other testing costs for noncompliant materials from the Contract Price, and such deduction shall not constitute a withholding.

5.3 □ **Costs for After Hours and/or Off Site Inspections**

If the Contractor performs Work outside the Inspector's regular working hours or requests the Inspector to perform inspections off Site, costs of any inspections required outside regular working hours or off Site shall be borne by the Contractor and may be invoiced to the Contractor by the District or the District may deduct those expenses from the next Progress Payment.

6. □ **CONTRACTOR**

Contractor shall construct and complete, in a good and workmanlike manner, the Work for the Contract Price including any adjustment(s) to the Contract Price pursuant to provisions herein regarding changes to the Contract Price. Except as otherwise noted, Contractor shall provide and pay for all labor, materials, equipment, permits (excluding DSA), fees, licenses, facilities, transportation, taxes, bonds and insurance, and services necessary for the proper execution and completion of the Work, except as indicated herein.

6.1 Status of Contractor

6.1.1 Contractor is and shall at all times be deemed to be an independent contractor and shall be wholly responsible for the manner in which it and its Subcontractors perform the services required of it by the Contract Documents. Nothing herein contained shall be construed as creating the relationship of employer and employee, or principal and agent, between the District, or any of the District's employees or agents, and Contractor or any of Contractor's Subcontractors, agents or employees. Contractor assumes exclusively the responsibility for the acts of its agents, and employees as they relate to the services to be provided during the course and scope of their employment. Contractor, its Subcontractors, agents, and its employees shall not be entitled to any rights or privileges of District employees. District shall be permitted to monitor the Contractor's activities to determine compliance with the terms of this Contract.

6.1.2 As required by law, Contractor and all Subcontractors shall be properly licensed and regulated by the Contractors State License Board, 9821 Business Park Drive, Sacramento, California 95827, <http://www.cslb.ca.gov>.

6.1.3 As required by law, Contractor and all Subcontractors shall be properly registered as public works contractors by the Department of Industrial Relations at: <https://efiling.dir.ca.gov/PWCR/ActionServlet?action=displayPWCRegistrationForm> or current URL.

6.1.4 Contractor represents that it has no existing interest and will not acquire any interest, direct or indirect, which could conflict in any manner or degree with the performance of Work required under this Contract and that no person having any such interest shall be employed by Contractor.

6.2 Project Inspection Card(s)

Contractor shall verify that forms DSA 152 (or the current version applicable at the time the Work is performed) are issued for the Project prior to the commencement of construction.

6.3 Contractor's Supervision

6.3.1 During progress of the Work, Contractor shall keep on the Premises, and at all other locations where any Work related to the Contract is being performed, an experienced and competent project manager and construction superintendent who are employees of the Contractor, to whom the District does not object and at least one of whom shall be fluent in English, written and verbal.

6.3.2 The project manager and construction superintendent shall both speak fluently the predominant language of the Contractor's employees.

6.3.3 Before commencing the Work herein, Contractor shall give written notice to District of the name of its project manager and construction superintendent. Neither the Contractor's project manager nor construction superintendent shall be changed except with prior written notice to District. If the Contractor's project manager and/or construction superintendent proves to be unsatisfactory to Contractor, or to District, any of the District's employees, agents, the Construction Manager, or the Architect, Contractor shall notify District in writing before any

change occurs, but no less than two (2) business days prior. Any replacement of the project manager and/or construction superintendent shall be made promptly and must be satisfactory to the District. The Contractor's project manager and construction superintendent shall each represent Contractor, and all directions given to Contractor's project manager and/or construction superintendent shall be as binding as if given to Contractor.

6.3.4 Contractor shall give efficient supervision to Work, using its best skill and attention. Contractor shall carefully study and compare all Contract Documents, Drawings, Specifications, and other instructions and shall at once report to District, Construction Manager, and Architect any error, inconsistency, or omission that Contractor or its employees and Subcontractors may discover, in writing, with a copy to District's Project Inspector(s). The Contractor shall have responsibility for discovery of errors, inconsistencies, or omissions.

6.4 **Duty to Provide Fit Workers**

6.4.1 Contractor and Subcontractor(s) shall at all times enforce strict discipline and good order among their employees and shall not employ or work any unfit person or anyone not skilled in work assigned to that person. It shall be the responsibility of Contractor to ensure compliance with this requirement. District may require Contractor to permanently remove unfit persons from Project Site.

6.4.2 Any person in the employ of Contractor or Subcontractor(s) whom District may deem incompetent or unfit shall be excluded from working on the Project and shall not again be employed on the Project except with the prior written consent of District.

6.4.3 The Contractor shall furnish labor that can work in harmony with all other elements of labor employed or to be employed in the Work.

6.4.4 If Contractor intends to make any change in the name or legal nature of the Contractor's entity, Contractor must first notify the District in writing prior to making any contemplated change. The District shall determine in writing if Contractor's intended change is permissible while performing this Contract.

6.5 **Field Office**

6.5.1 Contractor shall provide a temporary office on the Work Site for the District's use exclusively, during the term of the Contract.

6.6 **Purchase of Materials and Equipment**

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.

6.7 **Documents on Work**

6.7.1 Contractor shall at all times keep on the Work Site, or at another location as the District may authorize in writing, one legible copy of all Contract Documents, including Addenda and Change Orders, and Titles 19 and 24 of the California Code of Regulations, the specified edition(s) of the Uniform Building Code, all approved

Drawings, Plans, Schedules, and Specifications, and all codes and documents referred to in the Specifications, and made part thereof. These documents shall be kept in good order and available to District, Construction Manager, Architect, Architect's representatives, the Project Inspector(s), and all authorities having jurisdiction. Contractor shall be acquainted with and comply with the provisions of these titles as they relate to this Project. (See particularly the duties of Contractor, Title 24, Part 1, California Code of Regulations, section 4-343.) Contractor shall also be acquainted with and comply with all California Code of Regulations provisions relating to conditions on this Project, particularly Titles 8 and 17. Contractor shall coordinate with Architect and Construction Manager and shall submit its verified report(s) according to the requirements of Title 24.

6.7.2 □ Daily Job Reports.

6.7.2.1 □ Contractor shall maintain, at a minimum, at least one (1) set of Daily Job Reports on the Project. These must be prepared by the Contractor's employee(s) who are present on Site, and must include, at a minimum, the following information:

- 6.7.2.1.1** □ A brief description of all Work performed on that day.
- 6.7.2.1.2** □ A summary of all other pertinent events and/or occurrences on that day.
- 6.7.2.1.3** □ The weather conditions on that day.
- 6.7.2.1.4** □ A list of all Subcontractor(s) working on that day, including DIR registration numbers.
- 6.7.2.1.5** □ A list of each Contractor employee working on that day and the total hours worked for each employee.
- 6.7.2.1.6** □ A complete list of all equipment on Site that day, whether in use or not.
- 6.7.2.1.7** □ A complete list of all materials, supplies, and equipment delivered on that day.
- 6.7.2.1.8** □ A complete list of all inspections and tests performed on that day.

6.7.2.2 □ Each day Contractor shall provide a copy of the previous day's Daily Job Report to the District or the Construction Manager.

6.8 □ **Preservation of Records**

Contractor shall maintain, and District shall have the right to inspect, Contractor's financial records for the Project, including, without limitation, Job Cost Reports for the Project in compliance with the criteria set forth herein. The District shall have the right to examine and audit all Daily Job Reports or other Project records of Contractor's project manager(s), project superintendent(s), and/or project foreperson(s), all certified payroll records and/or related documents including, without limitation, Job Cost Reports, payroll, payment, timekeeping and tracking documents; all books, estimates, records, contracts, documents, bid documents, bid cost data, subcontract job cost reports, and other data of the Contractor, any Subcontractor, and/or supplier, including computations and projections related to bidding, negotiating, pricing, or performing the Work or Contract modification, in order to evaluate the accuracy, completeness, and currency of the cost, manpower, coordination, supervision, or pricing data at no additional cost to the District. These documents may be duplicative and/or be in addition to any Bid Documents held in escrow by the District. The Contractor shall make available at its

office at all reasonable times the materials described in this paragraph for the examination, audit, or reproduction until three (3) years after final payment under this Contract. Notwithstanding the provisions above, Contractor shall provide any records requested by any governmental agency, if available, after the time set forth above.

6.9 Integration of Work

6.9.1 Contractor shall do all cutting, fitting, patching, and preparation of Work as required to make its several parts come together properly, to fit it to receive or be received by work of other contractors, and to coordinate tolerances to various pieces of work, showing upon, or reasonably implied by, the Drawings and Specifications for the completed structure, and shall conform them as District and/or Architect may direct.

6.9.2 Contractor shall make its own layout of lines and elevations and shall be responsible for the accuracy of both Contractor's and Subcontractors' work resulting therefrom.

6.9.3 Contractor and all Subcontractors shall take all field dimensions required in performance of the Work, and shall verify all dimensions and conditions on the Site. All dimensions affecting proper fabrication and installation of all Work must be verified prior to fabrication by taking field measurements of the true conditions. If there are any discrepancies between dimensions in drawings and existing conditions which will affect the Work, Contractor shall bring such discrepancies to the attention of the District and Architect for adjustment before proceeding with the Work. In doing so, it is recognized that Contractor is not acting in the capacity of a licensed design professional, and that Contractor's examination is made in good faith to facilitate construction and does not create an affirmative responsibility to detect errors, omissions or inconsistencies in the Contract Documents or to ascertain compliance with applicable laws, building codes or regulations. Following receipt of written notice from Contractor, the District and/or Architect shall inform Contractor what action, if any, Contractor shall take with regard to such discrepancies.

6.9.4 All costs caused by noncompliant, defective, or delayed Work shall be borne by Contractor, inclusive of repair work.

6.9.5 Contractor shall not endanger any work performed by it or anyone else by cutting, excavating, or otherwise altering work and shall not cut or alter work of any other contractor except with consent of District.

6.10 Notifications

6.10.1 Contractor shall notify the Architect and Project Inspector, in writing, of the commencement of construction of each and every aspect of the Work at least 48 hours in advance by submitting form DSA 156 (or the most current version applicable at the time the Work is performed) to the Project Inspector. Forms are available on the DSA's website at: <http://www.dgs.ca.gov/dsa/Forms.aspx>.

6.10.2 Contractor shall notify the Architect and Project Inspector, in writing, of the completion of construction of each and every aspect of the Work at least 48 hours in advance by submitting form DSA 156 (or current version) to the Project Inspector.

6.11□ Obtaining of Permits, Licenses and Registrations

Contractor shall secure and pay for all permits (except DSA), licenses, registrations, approvals and certificates necessary for prosecution of Work, including but not limited to those listed in the Special Conditions, if any, before the date of the commencement of the Work or before the permits, licenses, registrations, approvals and certificates are legally required to continue the Work without interruption. The Contractor shall obtain and pay, only when legally required, for all licenses, registrations, approvals, permits, inspections, and inspection certificates required to be obtained from or issued by any authority having jurisdiction over any part of the Work included in the Contract. All final permits, licenses, registrations, approvals and certificates shall be delivered to District before demand is made for final payment.

6.12□ Royalties and Patents

6.12.1□ Contractor shall obtain and pay, only when legally required, all royalties and license fees necessary for prosecution of Work before the earlier of the date of the commencement of the Work or the date that the license is legally required to continue the Work without interruption. Contractor shall defend suits or claims of infringement of patent, copyright, or other rights and shall hold the District, the Architect, and the Construction Manager harmless and indemnify them from loss on account thereof except when a particular design, process, or make or model of product is required by the Contract Documents. However, if the Contractor has reason to believe that the required design, process, or product is an infringement of a patent or copyright, the Contractor shall indemnify and defend the District, Architect and Construction Manager against any loss or damage unless the Contractor promptly informs the District of its information.

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

6.13□ Work to Comply With Applicable Laws and Regulations

6.13.1□ Contractor shall give all notices and comply with the following specific laws, ordinances, rules, and regulations and all other applicable laws, ordinances, rules, and regulations bearing on conduct of Work as indicated and specified, including but not limited to the appropriate statutes and administrative code sections. If Contractor observes that Drawings and Specifications are at variance therewith, or should Contractor become aware of the development of conditions not covered by Contract Documents that may result in finished Work being at variance therewith, Contractor shall promptly notify District in writing and any changes deemed necessary by District shall be made as provided in Contract for changes in Work.

6.13.1.1□ National Electrical Safety Code, U. S. Department of Commerce

6.13.1.2□ National Board of Fire Underwriters' Regulations

6.13.1.3□ International Building Code, latest addition, and the California Code of Regulations, title 24, and other amendments

6.13.1.4 □ Manual of Accident Prevention in Construction, latest edition, published by A.G.C. of America

6.13.1.5 □ Industrial Accident Commission's Safety Orders, State of California

6.13.1.6 □ Regulations of the State Fire Marshall (title 19, California Code of Regulations) and Pertinent Local Fire Safety Codes

6.13.1.7 □ Americans with Disabilities Act

6.13.1.8 □ Education Code of the State of California

6.13.1.9 □ Government Code of the State of California

6.13.1.10 □ Labor Code of the State of California, division 2, part 7, Public Works and Public Agencies

6.13.1.11 □ Public Contract Code of the State of California

6.13.1.12 □ California Art Preservation Act

6.13.1.13 □ U. S. Copyright Act

6.13.1.14 □ U. S. Visual Artists Rights Act

6.13.2 □ Contractor shall comply with all applicable mitigation measures, if any, adopted by any public agency with respect to this Project pursuant to the California Environmental Quality Act (Public Resources Code section 21000 et seq.).

6.13.3 □ If Contractor performs any Work that it knew, or through exercise of reasonable care should have known, to be contrary to any applicable laws, ordinance, rules, or regulations, Contractor shall bear all costs arising therefrom and arising from the correction of said Work.

6.13.4 □ Where Specifications or Drawings state that materials, processes, or procedures must be approved by the DSA, State Fire Marshall, or other body or agency, Contractor shall be responsible for satisfying requirements of such bodies or agencies applicable at the time the Work is performed, and as determined by those bodies or agencies.

6.14 □ **Safety/Protection of Persons and Property**

6.14.1 □ The Contractor will be solely and completely responsible for conditions of the Work Site, including safety of all persons and property during performance of the Work. This requirement will apply continuously and not be limited to normal working hours.

6.14.2 □ The wearing of hard hats will be mandatory at all times for all personnel on Site. Contractor shall supply sufficient hard hats to properly equip all employees and visitors.

6.14.3 Any construction review of the Contractor's performance is not intended to include review of the adequacy of the Contractor's safety measures in, on, or near the Work Site.

6.14.4 Implementation and maintenance of safety programs shall be the sole responsibility of the Contractor.

6.14.5 The Contractor shall furnish to the District a copy of the Contractor's safety plan within the time frame indicated in the Contract Documents and specifically adapted for the Project.

6.14.6 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 completion and final acceptance by District. All Work shall be solely at Contractor's risk with the exception of damage to the Work caused by "acts of God" as defined in Public Contract Code section 7105.

6.14.7 Contractor shall take, and require Subcontractors to take, all necessary precautions for safety of workers on the Project 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. Contractor shall furnish, erect, and properly maintain at all times, all necessary safety devices, safeguards, construction canopies, signs, 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.

6.14.8 Hazards Control – Contractor shall store volatile wastes in covered metal containers and remove them from the Site daily. Contractor shall prevent accumulation of wastes that create hazardous conditions. Contractor shall provide adequate ventilation during use of volatile or noxious substances.

6.14.9 Contractor shall designate a responsible member of its organization on the Project, 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. Name and position of person so designated shall be reported to District by Contractor.

6.14.10 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, Contractor shall correct such violation promptly.

6.14.11 Contractor shall comply with any District storm water requirements that are approved by the District and applicable to the Project, at no additional cost to the District.

6.14.12 In an emergency affecting safety of life or of work or of adjoining property, Contractor, without special instruction or authorization, shall act, at its discretion, to prevent such threatened loss or injury. Any compensation claimed by Contractor on account of emergency work shall be determined by agreement.

6.14.13 □ All salvage materials will become the property of the Contractor and shall be removed from the Site unless otherwise called for in the Contract Documents. However, the District reserves the right to designate certain items of value that shall be turned over to the District unless otherwise directed by District.

6.14.14 □ All connections to public utilities and/or existing on-site services shall be made and maintained in such a manner as to not interfere with the continuing use of same by the District during the entire progress of the Work.

6.14.15 □ Contractor shall provide such heat, covering, and enclosures as are necessary to protect all Work, materials, equipment, appliances, and tools against damage by weather conditions, such as extreme heat, cold, rain, snow, dry winds, flooding, or dampness.

6.14.16 □ The Contractor shall protect and preserve the Work from all damage or accident, providing any temporary roofs, window and door coverings, boxings, or other construction as required by the Architect. The Contractor shall be responsible for existing structures, walks, roads, trees, landscaping, and/or improvements in working areas; and shall provide adequate protection therefore. If temporary removal is necessary of any of the above items, or damage occurs due to the Work, the Contractor shall replace same at his expense with same kind, quality, and size of Work or item damaged. This shall include any adjoining property of the District and others.

6.14.17 □ 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.

6.14.18 □ Contractor shall confine apparatus, the storage of materials, and the operations of workers to limits indicated by law, ordinances, permits, or directions of Architect, and shall not interfere with the Work or unreasonably encumber Premises or overload any structure with materials. Contractor shall enforce all instructions of District and Architect regarding signs, advertising, fires, and smoking, and require that all workers comply with all regulations while on Project Site.

6.14.19 □ Contractor, Contractor's employees, Subcontractors, Subcontractors' employees, or any person associated with the Work shall conduct themselves in a manner appropriate for a school site. No verbal or physical contact with neighbors, students, and faculty, profanity, or inappropriate attire or behavior will be permitted. District may require Contractor to permanently remove non-complying persons from Project Site.

6.14.20 □ Contractor shall take care to prevent disturbing or covering any survey markers, monuments, or other devices marking property boundaries or corners. If such markers are disturbed, Contractor shall have a civil engineer, registered as a professional engineer in California, replace them at no cost to District.

6.14.21 □ In the event that the Contractor enters into any agreement with owners of any adjacent property to enter upon the adjacent property for the purpose of performing the Work, Contractor shall fully indemnify, defend, and hold harmless each person, entity, firm, or agency that owns or has any interest in adjacent property. The form and content of the agreement of indemnification shall be

approved by the District prior to the commencement of any Work on or about the adjacent property. The Contractor shall also indemnify the District as provided in the indemnification provision herein. These provisions shall be in addition to any other requirements of the owners of the adjacent property.

6.15 □ Working Evenings and Weekends

Contractor may be required to work increased hours, evenings, and/or weekends at no additional cost to the District. Contractor shall give the District seventy-two (72) hours' notice prior to performing any evening and/or weekend work. Contractor shall perform all evening and/or weekend work only upon District's approval and in compliance with all applicable rules, regulations, laws, and local ordinances including, without limitation, all noise and light limitations. Contractor shall reimburse the District for any increased or additional Inspector charges as a result of Contractor's increased hours, or evening and/or weekend work.

6.16 □ Cleaning Up

6.16.1 □ The Contractor shall provide all services, labor, materials, and equipment necessary for protecting and securing the Work, all school occupants, furnishings, equipment, and building structure from damage until its completion and final acceptance by District. Dust barriers shall be provided to isolate dust and dirt from construction operations. At completion of the Work and portions thereof, Contractor shall clean to the original state any areas beyond the Work area that become dust laden as a result of the Work. The Contractor must erect the necessary warning signs and barricades to ensure the safety of all school occupants. The Contractor at all times must maintain good housekeeping practices to reduce the risk of fire damage and must make a fire extinguisher, fire blanket, and/or fire watch, as applicable, available at each location where cutting, braising, soldering, and/or welding is being performed or where there is an increased risk of fire.

6.16.2 □ Contractor at all times shall keep Premises, including property immediately adjacent thereto, free from debris such as waste, rubbish (including personal rubbish of workers, e.g., food wrappers, etc.), and excess materials and equipment caused by the Work. Contractor shall not leave debris under, in, or about the Premises (or surrounding property or neighborhood), but shall promptly remove same from the Premises on a daily basis. If Contractor fails to clean up, District may do so and the cost thereof shall be charged to Contractor. If Contract is for work on an existing facility, Contractor shall also perform specific clean-up on or about the Premises upon request by the District as it deems necessary for the continuing education process. Contractor shall comply with all related provisions of the Specifications.

6.16.3 □ If the Construction Manager, Architect, or District observes the accumulation of trash and debris, the District will give the Contractor a 24-hour written notice to mitigate the condition.

6.16.4 □ Should the Contractor fail to perform the required clean-up, or should the clean-up be deemed unsatisfactory by the District, the District will then perform the clean-up. All cost associated with the clean-up work (including all travel, payroll burden, and costs for supervision) will be deducted from the Contract Price, or District may withhold those amounts from payment(s) to Contractor.

7. SUBCONTRACTORS

7.1 Contractor shall provide the District with information for all Subcontracts as indicated in the Contractor's Submittals and Schedules Section herein.

7.2 No contractual relationship exists between the District and any Subcontractor, supplier, or sub-subcontractor by reason of this Contract.

7.3 Contractor agrees to bind every Subcontractor by terms of this Contract as far as those terms that are applicable to Subcontractor's work including, without limitation, all labor, wage & hour, apprentice and related provisions and requirements. If Contractor shall subcontract any part of this Contract, Contractor shall be as fully responsible to District for acts and omissions of any Subcontractor and of persons either directly or indirectly employed by any Subcontractor, including Subcontractor caused Project delays, as it is for acts and omissions of persons directly employed by Contractor. The divisions or sections of the Specifications and/or the arrangement of the drawings are not intended to control the Contractor in dividing the Work among Subcontractors or limit the work performed by any trade.

7.4 District's consent to, or approval of, or failure to object to, any Subcontractor under this Contract shall not in any way relieve Contractor of any obligations under this Contract and no such consent shall be deemed to waive any provisions of this Contract.

7.5 Contractor is directed to familiarize itself with sections 4100 through 4114 of the Public Contract Code of the State of California, as regards subletting and subcontracting, and to comply with all applicable requirements therein. In addition, Contractor is directed to familiarize itself with sections 1720 through 1861 of the Labor Code of the State of California, as regards the payment of prevailing wages and related issues, and to comply with all applicable requirements therein including, without limitation, section 1775 and the Contractor's and Subcontractors' obligations and liability for violations of prevailing wage law and other applicable laws.

7.6 No Contractor whose Bid is accepted shall, without consent of the awarding authority and in full compliance with section 4100 et seq. of the Public Contract Code, including, without limitation, sections 4107, 4107.5, and 4109 of the Public Contract Code, and section 1771.1 of the Labor Code, either:

7.6.1 ☐ Substitute any person as a Subcontractor in place of the Subcontractor designated in the original Bid; or

7.6.2 ☐ Permit any Subcontract to be assigned or transferred, or allow any portion of the Work to be performed by anyone other than the original Subcontractor listed in the Bid; or

7.6.3 ☐ Sublet or subcontract any portion of the Work in excess of one-half of one percent (0.5%) of the Contractor's total bid as to which his original bid did not designate a Subcontractor.

7.7 The Contractor shall be responsible for the coordination of the trades, Subcontractors, sub-subcontractors, and material or equipment suppliers working on the Project.

7.7.1 If the Contract is valued at \$1 million or more and uses, or plans to use, state bond funds, then Contractor is responsible for ensuring that first tier Subcontractors holding C-4, C-7, C-10, C-16, C-20, C-34, C-36, C-38, C-42, C-43, and/or C-46 licenses are prequalified by the District to work on the Project pursuant to Public Contract Code section 20111.6.

7.7.2 Contractor is responsible for ensuring that all Subcontractors are properly registered as public works contractors by the Department of Industrial Relations.

7.8 Contractor is solely responsible for settling any differences between the Contractor and its Subcontractor(s) or between Subcontractors.

7.9 Contractor must include in all of its subcontracts the assignment provisions as indicated in the Termination section of these General Conditions.

8. OTHER CONTRACTS/CONTRACTORS

8.1 District reserves the right to let other contracts, and/or to perform work with its own forces, in connection with the Project. Contractor shall afford other contractors reasonable opportunity for introduction and storage of their materials and execution of their work and shall properly coordinate and connect Contractor's Work with the work of other contractors.

8.2 In addition to Contractor's obligation to protect its own Work, Contractor shall protect the work of any other contractor that Contractor encounters while working on the Project.

8.3 If any part of Contractor's Work depends for proper execution or results upon work of District or any other contractor, the Contractor shall inspect and, before proceeding with its Work, promptly report to the District in writing any defects in District's or any other contractor's work that render Contractor's Work unsuitable for proper execution and results. Contractor shall be held accountable for damages to District for District's or any other contractor's work that Contractor failed to inspect or should have inspected. Contractor's failure to inspect and report shall constitute Contractor's acceptance of all District's or any other contractor's work as fit and proper for reception of Contractor's Work, except as to defects that may develop in District's or any other contractor's work after execution of Contractor's Work and not caused by execution of Contractor's Work.

8.4 To ensure proper execution of its subsequent work, Contractor shall measure and inspect work already in place and shall at once report to the District in writing any discrepancy between that executed work and the Contract Documents.

8.5 Contractor shall ascertain to its own satisfaction the scope of the Project and nature of District's or any other contracts that have been or may be awarded by District in prosecution of the Project to the end that Contractor may perform this Contract in light of the other contracts, if any.

8.6 Nothing herein contained shall be interpreted as granting to Contractor exclusive occupancy of the Site, the Premises, or of the Project. Contractor shall not cause any unnecessary hindrance or delay to the use and/or school operation(s) of the Premises and/or to District or any other contractor working on the Project. If simultaneous execution of any contract or school operation is likely to cause interference with performance of Contractor's Contract, Contractor shall coordinate with those contractor(s), person(s), and/or entity(s) and shall notify the District of the resolution.

9. DRAWINGS AND SPECIFICATIONS

9.1 A complete list of all Drawings that form a part of the Contract is to be found as an index on the Drawings themselves, and/or may be provided to the Contractor and/or in the Table of Contents.

9.2 Materials or Work described in words that so applied have a well-known technical or trade meaning shall be deemed to refer to recognized standards, unless noted otherwise.

9.3 Trade Name or Trade Term. It is not the intention of this Contract to go into detailed descriptions of any materials and/or methods commonly known to the trade under "trade name" or "trade term." The mere mention or notation of "trade name" or "trade term" shall be considered a sufficient notice to Contractor that it will be required to complete the work so named, complete, finished, and operable, with all its appurtenances, according to the best practices of the trade.

9.4 The naming of any material and/or equipment shall mean furnishing and installing of same, including all incidental and accessory items thereto and/or labor therefor, as per best practices of the trade(s) involved, unless specifically noted otherwise.

9.5 Contract Documents are complementary, and what is called for by one shall be binding as if called for by all. As such, Drawings and Specifications are intended to be fully cooperative and to agree. However, if Contractor observes that Drawings and Specifications are in conflict with the Contract Documents, Contractor shall promptly notify District and Architect in writing, and any necessary changes shall be made as provided in the Contract Documents.

9.6 In the case of discrepancy or ambiguity in the Contract Documents, the order of precedence in the Agreement shall prevail. However, in the case of discrepancy or ambiguity solely between and among the Drawings and Specifications, the discrepancy or ambiguity shall be resolved in favor of the interpretation that will provide District with the functionally complete and operable Project described in the Drawings and Specifications. In case of ambiguity, conflict, or lack of information, District will furnish clarifications with reasonable promptness.

9.7 Drawings and Specifications are intended to comply with all laws, ordinances, rules, and regulations of constituted authorities having jurisdiction, and where referred to in the Contract Documents, the laws, ordinances, rules, and regulations shall be considered as a part of the Contract within the limits specified. Contractor shall bear all expense of correcting work done contrary to said laws, ordinances, rules, and regulations.

9.8 As required by Section 4-317(c), Part 1, Title 24, CCR: "Should any existing conditions such as deterioration or non-complying construction be discovered which is not covered by the DSA-approved documents wherein the finished work will not comply with Title 24, California Code of Regulations, a construction change document, or a separate set of plans and specifications, detailing and specifying the required repair work shall be submitted to and approved by DSA before proceeding with the repair work."

9.9 Ownership of Drawings

All copies of Plans, Drawings, Designs, Specifications, and copies of other incidental architectural and engineering work, or copies of other Contract Documents furnished by District, are the property of District. They are not to be used by Contractor in other work and, with the exception of signed sets of Contract Documents, are to be returned to District on request at completion of Work, or may be used by District as it may require without any additional costs to District. 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. District hereby grants the Contractor, Subcontractors, sub-subcontractors, and material or equipment suppliers a limited license to use applicable portions of the Drawings prepared for the Project in the execution of their Work under the Contract Documents.

10. CONTRACTOR'S SUBMITTALS AND SCHEDULES

Contractor's submittals shall comply with the provisions and requirements of the Specifications including, without limitation Submittals.

10.1 Schedule of Work, Schedule of Submittals, and Schedule of Values

10.1.1 Within **TEN (10)** calendar days after the date of the Notice to Proceed (unless otherwise specified in the Specifications), the Contractor shall prepare and submit to the District for review, in a form supported by sufficient data to substantiate its accuracy as the District may require:

10.1.1.1 Preliminary Schedule. A preliminary schedule of construction indicating the starting and completion dates of the various stages of the Work, including any information and following any form as may be specified in the Specifications. Once approved by District, this shall become the Construction Schedule. This schedule shall include and identify all tasks that are on the Project's critical path with a specific determination of the start and completion of each critical path task as well as all Contract milestones and each milestone's completion date(s) as may be required by the District.

10.1.1.1.1 The District is not required to approve a preliminary schedule of construction with early completion, i.e., one that shows early completion dates for the Work and/or milestones. Contractor shall not be entitled to extra compensation if the District approves a Construction Schedule with an early completion date and Contractor completes the Project beyond the date shown in the schedule but within the Contract Time. A Construction Schedule showing the Work completed in less than the Contract Time, the time between the early completion date and the end of the Contract Time shall be Float.

10.1.1.2 Preliminary Schedule of Values. A preliminary schedule of values for all of the Work, which must include quantities and prices of items aggregating the Contract Price and must subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. Unless the Special Conditions contain different limits, this preliminary schedule of values shall include, at a minimum, the following information and the following structure:

10.1.1.2.1 Divided into at least the following categories:

- 10.1.1.2.1.1** Overhead and profit;
- 10.1.1.2.1.2** Supervision;
- 10.1.1.2.1.3** General conditions;
- 10.1.1.2.1.4** Layout;
- 10.1.1.2.1.5** Mobilization;
- 10.1.1.2.1.6** Submittals;
- 10.1.1.2.1.7** Bonds and insurance;
- 10.1.1.2.1.8** Close-out/Certification documentation;
- 10.1.1.2.1.9** Demolition;
- 10.1.1.2.1.10** Installation;
- 10.1.1.2.1.11** Rough-in;
- 10.1.1.2.1.12** Finishes;
- 10.1.1.2.1.13** Testing;
- 10.1.1.2.1.14** Punchlist and District acceptance.

10.1.1.2.2 And also divided by each of the following areas:

- 10.1.1.2.2.1** Site work;
- 10.1.1.2.2.2** By each building;
- 10.1.1.2.2.3** By each floor.

10.1.1.2.3 The preliminary schedule of values shall not provide for values any greater than the following percentages of the Contract value:

- 10.1.1.2.3.1** Mobilization and layout combined to equal not more than 1%;
- 10.1.1.2.3.2** Submittals, samples and shop drawings combined to equal not more than 3%;
- 10.1.1.2.3.3** Bonds and insurance combined to equal not more than 2%.

10.1.1.2.4 Closeout documentation shall have a value in the preliminary schedule of not less than 5%.

10.1.1.2.5 Notwithstanding any provision of the Contract Documents to the contrary, payment of the Contractor's overhead, supervision, general conditions costs, and profit, as reflected in the Cost Breakdown, shall be paid based on percentage complete, with the disbursement of Progress Payments and the Final Payment.

10.1.1.2.6 Contractor shall certify that the preliminary schedule of values as submitted to the District is accurate and reflects the costs as developed in preparing Contractor's bid. For example, without limiting the foregoing,

Contractor shall not "front-load" the preliminary schedule of values with dollar amounts greater than the value of activities performed early in the Project.

10.1.1.2.7 The preliminary schedule of values shall be subject to the District's review and approval of the form and content thereof. In the event that the District objects to any portion of the preliminary schedule of values, the District shall notify the Contractor, in writing, of the District's objection(s) to the preliminary schedule of values. Within five (5) calendar days of the date of the District's written objection(s), Contractor shall submit a revised preliminary schedule of values to the District for review and approval. The foregoing procedure for the preparation, review and approval of the preliminary schedule of values shall continue until the District has approved the entirety of the preliminary schedule of values.

10.1.1.2.8 Once the preliminary schedule of values is approved by the District, this shall become the Schedule of Values. The Schedule of Values shall not be thereafter modified or amended by the Contractor without the prior consent and approval of the District, which may be granted or withheld in the sole discretion of the District.

10.1.1.3 Preliminary Schedule of Submittals. A preliminary schedule of submittals, including Shop Drawings, Product Data, and Samples submittals. Once approved by District, this shall become the Submittal Schedule. All submittals shall be forwarded to the District by the date indicated on the approved Submittal Schedule, unless an earlier date is necessary to maintain the Construction Schedule, in which case those submittals shall be forwarded to the District so as not to delay the Construction Schedule. Upon request by the District, Contractor shall provide an electronic copy of all submittals to the District. All submittals shall be submitted no later than 90 days after the Notice to Proceed.

10.1.1.4 Safety Plan. Contractor's Safety Plan specifically adapted for the Project. Contractor's Safety Plan shall comply with the following requirements:

10.1.1.4.1 All applicable requirements of California Division of Occupational Safety and Health ("CalOSHA") and/or of the United States Occupational Safety and Health Administration ("OSHA").

10.1.1.4.2 All provisions regarding Project safety, including all applicable provisions in these General Conditions.

10.1.1.4.3 Contractor's Safety Plan shall be in English and in the language(s) of the Contractor's and its Subcontractors' employees.

10.1.1.5 Complete Registered Subcontractors List. The name, address, telephone number, facsimile number, California State Contractors License number, classification, DIR registration number and monetary value of all Subcontracts of any tier for parties furnishing labor, material, or equipment for completion of the Project.

10.1.2 Contractor must provide all schedules both in hard copy and electronically, in a format (e.g., Microsoft Project or Primavera) approved in advance by the District.

10.1.3 □ The District will review the schedules submitted and the Contractor shall make changes and corrections in the schedules as requested by the District and resubmit the schedules until approved by the District.

10.1.4 □ The District shall have the right at any time to revise the schedule of values if, in the District's sole opinion, the schedule of values does not accurately reflect the value of the Work performed.

10.1.5 □ All submittals and schedules must be approved by the District before Contractor can rely on them as a basis for payment.

10.2 □ **Monthly Progress Schedule(s)**

10.2.1 □ Contractor shall provide Monthly Progress Schedule(s) to the District. A Monthly Progress Schedule shall update the approved Construction Schedule or the last Monthly Progress Schedule, showing all work completed and to be completed as well as updating the Registered Subcontractors List. The monthly Progress Schedule shall be sent within the timeframe requested by the District and shall be in a format acceptable to the District and contain a written narrative of the progress of work that month and any changes, delays, or events that may affect the work. The process for District approval of the Monthly Progress Schedule shall be the same as the process for approval of the Construction Schedule.

10.2.2 □ Contractor shall submit Monthly Progress Schedule(s) with all payment applications.

10.2.3 □ Contractor must provide all schedules both in hard copy and electronically, in a format (e.g., Microsoft Project or Primavera) approved in advance by the District.

10.2.4 □ The District will review the schedules submitted and the Contractor shall make changes and corrections in the schedules as requested by the District and resubmit the schedules until approved by the District.

10.2.5 □ The District shall have the right at any time to revise the schedule of values if, in the District's sole opinion, the schedule of values does not accurately reflect the value of the Work performed.

10.2.6 □ All submittals and schedules must be approved by the District before Contractor can rely on them as a basis for payment.

10.3 □ **Material Safety Data Sheets (MSDS)**

Contractor is required to ensure Material Safety Data Sheets are available in a readily accessible place at the Work 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 ensure proper labeling on substances brought onto the job site and 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. Two additional copies of the Material Safety Data Sheets shall also be submitted directly to the District.

11. SITE ACCESS, CONDITIONS, AND REQUIREMENTS

11.1 Site Investigation

Before bidding on this Work, Contractor shall make a careful investigation of the Site and thoroughly familiarize itself with the requirements of the Contract. By the act of submitting a bid for the Work included in this Contract, Contractor shall be deemed to have made a complete study and investigation, and to be familiar with and accepted the existing conditions of the Site.

Prior to commencing the Work, Contractor and the District's representative shall survey the Site to document the condition of the Site. Contractor will record the survey in digital videotape format and provide an electronic copy to the District within fourteen (14) days of the survey. This electronic record shall serve as a basis for determining any damages caused by the Contractor during the Project. The Contractor may also document any pre-existing conditions in writing, provided that both the Contractor and the District's representative agree on said conditions and sign a memorandum documenting the same.

11.2 Soils Investigation Report

11.2.1 When a soils investigation report obtained from test holes at Site or for the Project is available, that report may be available to the Contractor but shall not be a part of this Contract and shall not alleviate or excuse the Contractor's obligation to perform its own investigation. Any information obtained from that report or any information given on Drawings as to subsurface soil condition or to elevations of existing grades or elevations of underlying rock is approximate only, is not guaranteed, does not form a part of this Contract, and Contractor may not rely thereon. By submitting its bid, Contractor acknowledges that it has made visual examination of Site and has made whatever tests Contractor deems appropriate to determine underground condition of soil.

11.2.2 Contractor agrees that no claim against District will be made by Contractor for damages and hereby waives any rights to damages if, during progress of Work, Contractor encounters subsurface or latent conditions at Site materially differing from those shown on Drawings or indicated in Specifications, or for unknown conditions of an unusual nature that differ materially from those ordinarily encountered in the work of the character provided for in Plans and Specifications, except as indicated in the provisions of these General Conditions regarding trenches, trenching, and/or existing utility lines.

11.3 Access to Work

District and its representatives shall at all times have access to Work wherever it is in preparation or progress, including storage and fabrication. Contractor shall provide safe and proper facilities for such access so that District's representatives may perform their functions.

11.4 Layout and Field Engineering

11.4.1 All field engineering required for layout of this Work and establishing grades for earthwork operations shall be furnished by Contractor at its expense. This Work shall be done by a qualified, California-registered civil engineer approved

in writing by District and Architect. Any required Record and/or As-Built Drawings of Site development shall be prepared by the approved civil engineer.

11.4.2 □ The Contractor shall be responsible for having ascertained pertinent local conditions such as location, accessibility, and general character of the Site and for having satisfied itself as to the conditions under which the Work is to be performed. Contractor shall follow best practices, including but not limited to potholing to avoid utilities. District shall not be liable for any claim for allowances because of Contractor's error, failure to follow best practices, or negligence in acquainting itself with the conditions at the Site.

11.4.3 □ Contractor shall protect and preserve established benchmarks and monuments and shall make no changes in locations without the prior written approval of District. Contractor shall replace any benchmarks or monuments that are lost or destroyed subsequent to proper notification of District and with District's approval.

11.5 □ **Utilities**

Utilities shall be provided as indicated in the Specifications.

11.6 □ **Sanitary Facilities**

Sanitary facilities shall be provided as indicated in the Specifications.

11.7 □ **Surveys**

Contractor shall provide surveys done by a California-licensed civil engineer surveyor to determine locations of construction, grading, and site work as required to perform the Work.

11.8 □ **Regional Notification Center**

The Contractor, except in an emergency, shall contact the appropriate regional notification center at least two (2) days prior to commencing any excavation if the excavation will be conducted in an area or in a private easement that 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. No excavation shall be commenced and/or carried out by the Contractor unless an inquiry identification number has been assigned to the Contractor or any Subcontractor and the Contractor has given the District the identification number. Any damages arising from Contractor's failure to make appropriate notification shall be at the sole risk and expense of the Contractor. Any delays caused by failure to make appropriate notification shall be at the sole risk of the Contractor and shall not be considered for an extension of the Contract Time.

11.9 □ **Existing Utility Lines**

11.9.1 □ Pursuant to Government Code section 4215, District assumes the responsibility for removal, relocation, and protection of main or trunk utility lines and facilities located on the construction Site at the time of commencement of construction under this Contract with respect to any such utility facilities that are not identified in the Plans and Specifications. Contractor shall not be assessed for

liquidated damages for delay in completion of the Project caused by failure of District or the owner of a utility to provide for removal or relocation of such utility facilities.

11.9.2 □ Locations of existing utilities provided by District shall not be considered exact, but approximate within a reasonable margin and shall not relieve Contractor of responsibilities to exercise reasonable care or costs of repair due to Contractor's failure to do so. District shall compensate Contractor for the costs of locating, repairing damage not due to the failure of Contractor to exercise reasonable care, and removing or relocating such utility facilities not indicated in the Plans and Specifications with reasonable accuracy, and for equipment necessarily idle during such work.

11.9.3 □ No provision herein shall be construed to preclude assessment against Contractor for any other delays in completion of the Work. Nothing in this Article shall be deemed to require District to indicate the presence of existing service laterals, appurtenances, or other utility lines, within the exception of main or trunk utility lines or whenever the presence of these utilities on the Site of the construction Project can be inferred from the presence of other visible facilities, such as buildings, meter junction boxes, on or adjacent to the Site of the construction.

11.9.4 □ If Contractor, while performing Work under this Contract, discovers utility facilities not identified by District in Contract Plans and Specifications, Contractor shall immediately notify the District and the utility in writing. The cost of repair for damage to above-mentioned visible facilities without prior written notification to the District shall be borne by the Contractor.

11.10 □ **Notification**

Contractor understands, acknowledges and agrees that the purpose for prompt notification to the District pursuant to these provisions is to allow the District to investigate the condition(s) so that the District shall have the opportunity to decide how the District desires to proceed as a result of the condition(s). Accordingly, failure of Contractor to promptly notify the District in writing, pursuant to these provisions, shall constitute Contractor's waiver of any claim for damages or delay incurred as a result of the condition(s).

11.11 □ **Hazardous Materials**

Contractor shall comply with all provisions and requirements of the Contract Documents related to hazardous materials including, without limitation, Hazardous Materials Procedures and Requirements.

11.12 □ **No Signs**

Neither the Contractor nor any other person or entity shall display any signs not required by law or the Contract Documents at the Site, fences trailers, offices, or elsewhere on the Site without specific prior written approval of the District.

12. TRENCHES

12.1 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, promptly submit to the District and/or a registered civil or structural engineer employed by the District or Architect, a detailed plan, stamped by a licensed engineer retained by the Contractor, showing the design of shoring for protection from the hazard of caving ground during the excavation of such trench or trenches.

12.2 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.

12.3 No Tort Liability of District

Pursuant to Labor Code section 6705, nothing in this Article shall impose tort liability upon the District or any of its employees.

12.4 No Excavation without Permits

The Contractor shall not commence any excavation Work until it has secured all necessary permits including the required CalOSHA excavation/shoring permit. Any permits shall be prominently displayed on the Site prior to the commencement of any excavation.

12.5 Discovery of Hazardous Waste and/or Unusual Conditions

12.5.1 Pursuant to Public Contract Code section 7104, if the Work involves digging trenches or other excavations that extend deeper than four feet below the Surface, the Contractor shall promptly, and before the following conditions are disturbed, notify the District, in writing, of any:

12.5.1.1 Material that the Contractor believes may be 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 provisions of existing law.

12.5.1.2 Subsurface or latent physical conditions at the Site differing from those indicated.

12.5.1.3 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.

12.5.2 □ The District shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or 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 under the procedures described herein.

12.5.3 □ In the event that a dispute arises between District and the Contractor whether the conditions materially differ, or 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 that pertain to the resolution of disputes and protests.

13. □ INSURANCE AND BONDS

13.1 □ Insurance

Unless different provisions and/or limits are indicated in the Special Conditions, all insurance required of Contractor and/or its Subcontractor(s) shall be in the amounts and include the provisions set forth herein.

13.1.1 □ Commercial General Liability and Automobile Liability Insurance

13.1.1.1 □ Contractor shall procure and maintain, during the life of this Contract, Commercial General Liability Insurance and Automobile Liability Insurance that shall protect Contractor, District, State, Construction Manager(s), Project Inspector(s), and Architect(s) from all claims for bodily injury, property damage, personal injury, death, advertising injury, and medical payments arising from, or in connection with, operations under this Contract. This coverage shall be provided in a form at least as broad as Insurance Services (ISO) Form CG 0001 11188. Contractor shall ensure that Products Liability and Completed Operations coverage, Fire Damage Liability coverage, and Automobile Liability Insurance coverage including owned, non-owned, and hired automobiles, are included within the above policies and at the required limits, or Contractor shall procure and maintain these coverages separately.

13.1.1.2 □ Contractor's deductible or self-insured retention for its Commercial General Liability Insurance policy shall not exceed \$25,000 unless approved in writing by District.

13.1.1.3 □ All such policies shall be written on an occurrence form.

13.1.2 □ Excess Liability Insurance

13.1.2.1 □ If Contractor's underlying policy limits are less than required, subject to 13.1.2.3 below, Contractor may procure and maintain, during the life of this Contract, an Excess Liability Insurance Policy to meet the policy limit requirements of the required policies in order to satisfy, in the aggregate with its underlying policy, the insurance requirements herein..

13.1.2.2 There shall be no gap between the per occurrence amount of any underlying policy and the start of the coverage under the Excess Liability Insurance Policy. Any Excess Liability Insurance Policy shall be written on a following form and shall protect Contractor, District, State, Construction Manager(s), Project Manager(s), and Architect(s) in amounts and including the provisions as set forth in the Supplementary Conditions (if any) and/or Special Conditions, and that complies with all requirements for Commercial General Liability and Automobile Liability and Employers' Liability Insurance.

13.1.2.3 The District, in its sole discretion, may accept the Excess Liability Insurance Policy that brings Contractor's primary limits to the minimum requirements herein.

13.1.3 **Subcontractor(s):** Contractor shall require its Subcontractor(s), if any, to procure and maintain Commercial General Liability Insurance, Automobile Liability Insurance, and Excess Liability Insurance (if Subcontractor elects to satisfy, in part the insurance required herein by procuring and maintaining an Excess Liability Insurance Policy) with forms of coverage and limits equal to the amounts required of the Contractor.

13.1.4 **Workers' Compensation and Employers' Liability Insurance**

13.1.4.1 In accordance with provisions of section 3700 of the California Labor Code, the Contractor and every Subcontractor shall be required to secure the payment of compensation to its employees.

13.1.4.2 Contractor shall procure and maintain, during the life of this Contract, Workers' Compensation Insurance and Employers' Liability Insurance for all of its employees engaged in work under this Contract, on/or at the Site of the Project. This coverage shall cover, at a minimum, medical and surgical treatment, disability benefits, rehabilitation therapy, and survivors' death benefits. Contractor shall require its Subcontractor(s), if any, to procure and maintain Workers' Compensation Insurance and Employers' Liability Insurance for all employees of Subcontractor(s). Any class of employee or employees not covered by a Subcontractor's insurance shall be covered by Contractor's insurance. If any class of employee or employee engaged in Work under this Contract, on or at the Site of the Project, is not protected under the Workers' Compensation Insurance, Contractor shall provide, or shall cause a Subcontractor to provide, adequate insurance coverage for the protection of any employee(s) not otherwise protected before any of those employee(s) commence work.

13.1.5 **Builder's Risk Insurance: Builder's Risk "All Risk" Insurance**

Contractor shall procure and maintain, during the life of this Contract, Builder's Risk (Course of Construction), or similar first party property coverage acceptable to the District, issued on a replacement cost value basis. The cost shall be consistent with the total replacement cost of all insurable Work of the Project included within the Contract Documents. Coverage is to insure against all risks of accidental physical loss and shall include without limitation the perils of vandalism and/or malicious mischief (both without any limitation regarding vacancy or occupancy), sprinkler leakage, civil authority, theft, sonic disturbance, earthquake, flood, collapse, wind, rain, dust, fire, war, terrorism, lightning, smoke, and rioting. Coverage shall include debris removal, demolition, increased costs due to enforcement of all applicable

ordinances and/or laws in the repair and replacement of damaged and undamaged portions of the property, and reasonable costs for the Architect's and engineering services and expenses required as a result of any insured loss upon the Work and Project, including completed Work and Work in progress, to the full insurable value thereof.

13.1.6 Pollution Liability Insurance

13.1.6.1 Contractor shall procure and maintain Pollution Liability Insurance that shall protect Contractor, District, State, Construction Manager(s), Project Inspector(s), and Architect(s) from all claims for bodily injury, property damage, including natural resource damage, cleanup costs, removal, storage, disposal, and/or use of the pollutant arising from operations under this Contract, and defense, including costs and expenses incurred in the investigation, defense, or settlement of claims. Coverage shall apply to sudden and/or gradual pollution conditions resulting from the escape or release of smoke, vapors, fumes, acids, alkalis, toxic chemicals, liquids, or gases, natural gas, waste materials, or other irritants, contaminants, or pollutants, including asbestos. This coverage shall be provided in a form at least as broad as Insurance Services Offices, Inc. (ISO) Form CG 2415, or Contractor shall procure and maintain these coverages separately.

13.1.6.2 Contractor warrants that any retroactive date applicable to coverage under the policy shall predate the effective date of the Contract and that continuous coverage will be maintained or an extended reporting or discovery period will be exercised for a period of three (3) years, beginning from the time that the Work under the Contract is completed.

13.1.6.3 If Contractor is responsible for removing any pollutants from a site, then Contractor shall ensure that Any Auto, including owned, non-owned, and hired, is included within the above policies and at the required limits, to cover its automobile exposure from transporting the pollutants from the site to an approved disposal site. This coverage shall include the Motor Carrier Act Endorsement, MCS 90.

13.1.7 Proof of Insurance and Other Requirements: Endorsements and Certificates

13.1.7.1 Contractor shall not commence Work nor shall it allow any Subcontractor to commence Work under this Contract, until Contractor and its Subcontractor(s) have procured all required insurance and Contractor has delivered in duplicate to the District complete endorsements (or entire insurance policies) and certificates indicating the required coverages have been obtained, and the District has approved these documents.

13.1.7.2 Endorsements, certificates, and insurance policies shall include the following:

13.1.7.2.1 A clause stating the following, or other language acceptable to the District:

"This policy shall not be canceled until written notice to District, Architect, and Construction Manager stating date of the cancellation by the insurance

carrier. Date of cancellation may not be less than thirty (30) days after date of mailing notice."

13.1.7.2.2 Language stating in particular those insured, extent of insurance, location and operation to which insurance applies, expiration date, to whom cancellation and reduction notice will be sent, and length of notice period.

13.1.7.2.3 All endorsements, certificates and insurance policies shall state that District, its trustees, employees and agents, the State of California, Construction Manager(s), Project Manager(s), Inspector(s) and Architect(s) are named additional insureds under all policies except Workers' Compensation Insurance and Employers' Liability Insurance.

13.1.7.3 No policy shall be amended, canceled or modified, and the coverage amounts shall not be reduced, until Contractor or Contractor's broker has provided written notice to District, Architect(s), and Construction Manager(s) stating date of the amendment, modification, cancellation or reduction, and a description of the change. Date of amendment, modification, cancellation or reduction may not be less than thirty (30) days after date of mailing notice.

13.1.7.4 Insurance written on a "claims made" basis shall be retroactive to a date that coincides with or precedes Contractor's commencement of Work, including subsequent policies purchased as renewals or replacements. Said policy is to be renewed by the Contractor and all Subcontractors for a period of five (5) years following completion of the Work or termination of this Agreement. Such insurance must have the same coverage and limits as the policy that was in effect during the term of this Agreement, and will cover the Contractor and all Subcontractors for all claims made.

13.1.7.5 Contractor's and Subcontractors' insurance policy(s) shall be primary and non-contributory to any insurance or self-insurance maintained by District, its trustees, employees and/or agents, the State of California, Construction Manager(s), Project Manager(s), Inspector(s), and/or Architect(s).

13.1.7.6 All endorsements shall waive any right to subrogation against any of the named additional insureds.

13.1.7.7 Unless otherwise stated in the Special Conditions, all of Contractor's insurance shall be with insurance companies with an A.M. Best rating of no less than **A: VII**.

13.1.7.8 The insurance requirements set forth herein shall in no way limit the Contractor's liability arising out of or relating to the performance of the Work or related activities.

13.1.7.9 Failure of Contractor and/or its Subcontractor(s) to comply with the insurance requirements herein shall be deemed a material breach of the Contract.

13.1.8 Insurance Policy Limits

Unless different limits are indicated in the Special Conditions, the limits of insurance shall not be less than the following amounts:

Commercial General Liability	Product Liability and Completed Operations, Fire Damage Liability – Split Limit	\$2,000,000 per occurrence; \$4,000,000 aggregate
Automobile Liability	Any Auto – Combined Single Limit	\$1,000,000
Workers’ Compensation		Statutory limits pursuant to State law
Employers’ Liability		\$1,000,000
Builder’s Risk (Course of Construction)		Issued for the value and scope of Work indicated herein.
Pollution Liability		\$1,000,000 per claim; \$2,000,000 aggregate

13.2 Contract Security - Bonds

13.2.1 Contractor shall furnish two surety bonds issued by a California admitted surety insurer as follows:

13.2.1.1 Performance Bond: A bond in an amount at least equal to one hundred percent (100%) of Contract Price as security for faithful performance of this Contract.

13.2.1.2 Payment Bond: A bond in an amount at least equal to one hundred percent (100%) of the Contract Price as security for payment of persons performing labor and/or furnishing materials in connection with this Contract.

13.2.2 Cost of bonds shall be included in the Bid and Contract Price.

13.2.3 All bonds related to this Project shall be in the forms set forth in these Contract Documents and shall comply with all requirements of the Contract Documents, including, without limitation, the bond forms.

14. WARRANTY/GUARANTEE/INDEMNITY

14.1 Warranty/Guarantee

14.1.1 The Contractor shall obtain and preserve for the benefit of the District, manufacturer’s warranties on materials, fixtures, and equipment incorporated into the Work.

14.1.2 In addition to guarantees required elsewhere, Contractor shall, and hereby does guarantee and warrant all Work furnished on the job against all defects for a period of **ONE (1)** year after the later of the following dates, unless a longer period is provided for in the Contract Documents:

14.1.2.1 The acceptance by the District's governing board of the Work, subject to these General Conditions, or

14.1.2.2 The date that commissioning for the Project, if any, was completed.

At the District's sole option, Contractor shall repair or replace any and all of that Work, together with any other Work that may be displaced in so doing, that may prove defective in workmanship and/or materials within a **ONE (1)** year period from date of completion as defined above, unless a longer period is provided for in the Contract Documents, without expense whatsoever to District. In the event of failure of Contractor and/or Surety to commence and pursue with diligence said replacements or repairs within ten (10) days after being notified in writing, Contractor and Surety hereby acknowledge and agree that District is authorized to proceed to have defects repaired and made good at expense of Contractor and/or Surety who hereby agree to pay costs and charges therefore immediately on demand.

14.1.3 If, in the opinion of District, defective work creates a dangerous condition or requires immediate correction or attention to prevent further loss to District or to prevent interruption of operations of District, District will attempt to give the notice required above. If Contractor or Surety cannot be contacted or neither complies with District's request for correction within a reasonable time as determined by District, District may, notwithstanding the above provision, proceed to make any and all corrections and/or provide attentions the District believes are necessary. The costs of correction or attention shall be charged against Contractor and Surety of the guarantees provided in this Article or elsewhere in this Contract.

14.1.4 The above provisions do not in any way limit the guarantees on any items for which a longer guarantee is specified or on any items for which a manufacturer gives a guarantee for a longer period. Contractor shall furnish to District all appropriate guarantee or warranty certificates as indicated in the Specifications or upon request by District.

14.1.5 Nothing herein shall limit any other rights or remedies available to District.

14.2 Indemnity and Defense

14.2.1 To the furthest extent permitted by California law, the Contractor shall indemnify, keep and hold harmless the District, the Architect(s), and the Construction Manager(s), their respective consultants, separate contractors, board members, officers, representatives, , agents, and employees, in both individual and official capacities ("Indemnitees"), against all suits, claims, injury, damages, losses, and expenses ("Claims"), including but not limited to attorney's fees, caused by, arising out of, resulting from, or incidental to, in whole or in part, the performance of the Work under this Contract by the Contractor, its Subcontractors, vendors, or suppliers. However, the Contractor's indemnification and hold harmless obligation shall be reduced by the proportion of the Indemnitees' and/or Architect's liability to the extent the Claim(s) is/are caused by the sole negligence, active negligence, or

willful misconduct of the Indemnitees, and/or defects in design furnished by the Architect, as found by a court or arbitrator of competent jurisdiction. This indemnification and hold harmless obligation of the Contractor shall not be construed to negate, abridge, or otherwise reduce any right or obligation of indemnity that would otherwise exist or arise as to any Indemnitee or other person described herein. This indemnification and hold harmless obligation includes, but is not limited to, any failure or alleged failure by Contractor to comply with any provision of law, any failure or alleged failure to timely and properly fulfill all of its obligations under the Contract Documents in strict accordance with their terms, and without limitation, any failure or alleged failure of Contractor's obligations regarding any stop payment notice actions or liens, including Civil Wage and Penalty Assessments and/or Orders by the DIR.

14.2.2 □ To the furthest extent permitted by California law, Contractor shall also defend Indemnitees, at its own expense, including but not limited to attorneys' fees and costs, against all Claims caused by, arising out of, resulting from, or incidental to, in whole or in part, the performance of the Work under this Contract by the Contractor, its Subcontractors, vendors, or suppliers. However, the Contractor's defense obligation shall be reduced by the proportion of the Indemnitees' and/or Architect's liability to the extent caused by the sole negligence, active negligence, or willful misconduct of the Indemnitees, and/or defects in design furnished by the Architect, as found by a court or arbitrator of competent jurisdiction. The District shall have the right to accept or reject any legal representation that Contractor proposes to defend the Indemnitees. If any Indemnitee provides its own defense due to failure to timely respond to tender of defense, rejection of tender of defense, or conflict of interest of proposed counsel, Contractor shall reimburse such Indemnitee for any expenditures. Contractor's defense obligation shall not be construed to negate, abridge, or otherwise reduce any right or obligation of defense that would otherwise exist as to any Indemnitee or other person described herein. Contractor's defense obligation includes, but is not limited to, any failure or alleged failure by Contractor to comply with any provision of law, any failure or alleged failure to timely and properly fulfill all of its obligations under the Contract Documents in strict accordance with their terms, and without limitation, any failure or alleged failure of Contractor's obligations regarding any stop payment notice actions or liens, including Civil Wage and Penalty Assessments and/or Orders by the DIR. The Contractor shall give prompt notice to the District in the event of any Claim(s).

14.2.3 □ Without limitation of the provisions herein, if the Contractor's obligation to indemnify and hold harmless the Indemnitees or its obligation to defend Indemnitees as provided herein shall be determined to be void or unenforceable, in whole or in part, it is the intention of the parties that these circumstances shall not otherwise affect the validity or enforceability of the Contractor's agreement to indemnify, defend, and hold harmless the rest of the Indemnitees, as provided herein. Further, the Contractor shall be and remain fully liable on its agreements and obligations herein to the fullest extent permitted by law.

14.2.4 □ Pursuant to Public Contract Code section 9201, the District shall provide timely notification to Contractor of the receipt of any third-party Claim relating to this Contract. The District shall be entitled to recover its reasonable costs incurred in providing said notification.

14.2.5 In any and all Claims against any of the Indemnitees by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the Contractor's indemnification obligation herein shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the Contractor or any Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

14.2.6 The District may retain so much of the moneys due the Contractor as shall be considered necessary, until disposition of any such Claims or until the District, Architect(s) and Construction Manager(s) have received written agreement from the Contractor that they will unconditionally defend the District, Architect(s) and Construction Manager(s), their respective officers, agents and employees, and pay any damages due by reason of settlement or judgment.

14.2.7 The Contractor's defense and indemnification obligations hereunder shall survive the completion of Work, the warranty/guarantee period, and the termination of the Contract.

15. TIME

15.1 Notice to Proceed

15.1.1 District may issue a Notice to Proceed within ninety (90) days from the date of the Notice of Award. Once Contractor has received the Notice to Proceed, Contractor shall complete the Work within the period of time indicated in the Contract Documents.

15.1.2 In the event that the District desires to postpone issuing the Notice to Proceed beyond ninety (90) days from the date of the Notice of Award, it is expressly understood that with reasonable notice to the Contractor, the District may postpone issuing the Notice to Proceed. 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 issuance of the Notice to Proceed.

15.1.3 If the Contractor believes that a postponement of issuance of the Notice to Proceed will cause a hardship to Contractor, Contractor may terminate the Contract. Contractor's termination due to a postponement shall be by written notice to District within ten (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. Should Contractor terminate the Contract as a result of a notice of postponement, District shall have the authority to award the Contract to the next lowest responsive responsible bidder.

15.2 Computation of Time / Adverse Weather

15.2.1 The Contractor will only be allowed a time extension for Adverse Weather conditions if requested by Contractor in compliance with the time extension request procedures and only if all of the following conditions are met:

15.2.1.1 The weather conditions constitute Adverse Weather, as defined herein and further specified in the Special Conditions;

15.2.1.2 Contractor can verify that the Adverse Weather caused delays in excess of five (5) hours of the indicated labor required to complete the scheduled tasks of Work on the day affected by the Adverse Weather;

15.2.1.3 The Contractor's crew is dismissed as a result of the Adverse Weather;

15.2.1.4 Said delay adversely affects the critical path in the Construction Schedule; and

15.2.1.5 Exceeds twelve (12) days of delay per year.

15.2.2 If the aforementioned conditions are met, a non-compensable day-for-day extension will only be allowed for those days in excess of those indicated in the Special Conditions.

15.2.3 The Contractor shall work seven (7) days per week, if necessary, irrespective of inclement weather, to maintain access and the Construction Schedule, and to protect the Work under construction from the effects of Adverse Weather, all at no further cost to the District.

15.2.4 The Contract Time has been determined with consideration given to the average climate weather conditions prevailing in the County in which the Project is located.

15.3 **Hours of Work**

15.3.1 **Sufficient Forces**

Contractor and Subcontractors shall continuously furnish sufficient and competent work forces with the required levels of familiarity with the Project and skill, training and experience to ensure the prosecution of the Work in accordance with the Construction Schedule.

15.3.2 **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.

15.3.3 **No Work during State Testing**

Contractor shall, at no additional cost to the District and at the District's request, coordinate its Work to not disturb District students including, without limitation, not performing any Work when students at the Site are taking State or Federally-required tests. The District or District's Representative will provide Contractor with a schedule of test dates concurrent with the District's issuance of the Notice to Proceed, or as soon as test dates are made available to the District.

15.4□ Progress and Completion

15.4.1□ 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.

15.4.2□ No Commencement Without Insurance or Bonds

The Contractor shall not commence operations on the Project or elsewhere prior to the effective date of insurance and bonds. The date of commencement of the Work shall not be changed by the effective date of such insurance or bonds. If Contractor commences Work without insurance and bonds, all Work is performed at Contractor's peril and shall not be compensable until and unless Contractor secures bonds and insurance pursuant to the terms of the Contract Documents and subject to District claim for damages.

15.5□ Schedule

Contractor shall provide to District, Construction Manager, and Architect a schedule in conformance with the Contract Documents and as required in the Notice to Proceed and the Contractor's Submittals and Schedules section of these General Conditions.

15.6□ Expeditious Completion

The Contractor shall proceed expeditiously with adequate forces and shall achieve Completion within the Contract Time.

16.□ EXTENSIONS OF TIME – LIQUIDATED DAMAGES

16.1□ 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 completed within the time specified in the Contract Documents, it is understood that the District will suffer damage. It being impractical and unfeasible to determine the amount of actual damage, it is agreed the Contractor shall pay to District as fixed and liquidated damages, and not as a penalty, the amount set forth in the Agreement for each calendar day of delay in completion. Contractor and its Surety shall be liable for the amount thereof pursuant to Government Code section 53069.85.

16.2□ Excusable Delay

16.2.1□ Contractor shall not be charged for liquidated damages because of any delays in completion of Work which are not the fault of Contractor or its Subcontractors, 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 delay, notify District in writing of causes of delay including documentation and facts explaining the delay and the direct correlation between the cause and effect. District shall review the facts and extent of any delay and shall grant extension(s) of time for completing Work when, in its

judgment, the findings of fact justify an extension. Extension(s) 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 if Contractor has timely submitted the Construction Schedule as required herein.

16.2.2 □ Contractor shall notify the District pursuant to the claims provisions in these General Conditions of any anticipated delay and its cause. Following submission of a claim, the District 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.

16.2.3 □ 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. When requesting time, requests must be submitted with full justification and documentation. If the Contractor fails to submit justification, it waives its right to a time extension at a later date. Such justification must be based on the official Construction Schedule as updated at the time of occurrence of the delay or execution of Work related to any changes to the Scope of Work. Any claim for delay must include the following information as support, without limitation:

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

16.2.3.2 □ Specific logical ties to the Contract Schedule for the proposed changes and/or delay showing the activity/activities in the Construction Schedule that are affected by the change and/or delay. In particular, Contractor must show an actual impact to the schedule, after making a good faith effort to mitigate the delay by rescheduling the work, by providing an analysis of the schedule ("Schedule Analysis"). Such Schedule Analysis shall describe in detail the cause and effect of the delay and the impact on the critical dates in the Project schedule. (A portion of any delay of seven (7) days or more must be provided.)

16.2.3.3 □ A recovery schedule must be submitted within twenty (20) calendar days of written notification to the District of causes of delay.

16.3 □ **No Additional Compensation for Delays Within Contractor's Control**

16.3.1 □ Contractor is aware that governmental agencies, including, without limitation, the Division of the State Architect, the Department of General Services, gas companies, electrical utility companies, water districts, and other agencies may have to approve Contractor-prepared drawings or approve a proposed installation. Accordingly, Contractor shall include in its bid, time for possible review of its drawings and for reasonable delays and damages that may be caused by such agencies. Thus, Contractor is not entitled to make a claim for damages or delays arising from the review of Contractor's drawings.

16.3.2 □ Contractor shall only be entitled to compensation for delay when all of the following conditions are met:

16.3.2.1 □ The District is responsible for the delay;

16.3.2.2 The delay is unreasonable under the circumstances involved;

16.3.2.3 The delay was not within the contemplation of the District and Contractor;

16.3.2.4 The delay could not have been avoided or mitigated by Contractor's reasonable diligence; and

16.3.2.5 Contractor timely complies with the claims procedure of the Contract Documents.

16.4 **Float or Slack in the Schedule**

Float or slack is the amount of time between the early start date and the late start date, or the early finish date and the late finish date, of any of the activities in the schedule. Float or slack is not for the exclusive use of or benefit of either the District or the Contractor, but its use shall be determined solely by the District.

17. **CHANGES IN THE WORK**

17.1 **No Changes Without Authorization**

17.1.1 There shall be no change whatsoever in the Drawings, Specifications, or in the Work without an executed Change Order or a written Construction Change Directive authorized by the District 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 has authorized the same and the cost thereof has been approved in writing by Change Order or Construction Change Directive in advance of the changed Work being performed. 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 and approved in writing in the Change Order or Construction Change Directive. Contractor shall be responsible for any costs incurred by the District for professional services and DSA fees and/or delay to the Project Schedule, if any, for DSA to review any request for changes to the DSA approved plans and specifications for the convenience of the Contractor and/or to accommodate the Contractor's means and methods. 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.

17.1.2 Contractor shall perform immediately all work that has been authorized by a fully executed Change Order or Construction Change Directive. Contractor shall be fully responsible for any and all delays and/or expenses caused by Contractor's failure to expeditiously perform this Work.

17.1.3 Should any Change Order result in an increase in the Contract Price or extend the Contract Time, the cost of or length of extension in that Change Order shall be agreed to, in writing, by the District in advance of the Work by Contractor, and shall be subject to the monetary limitations set forth in Public Contract Code section 20118.4. In the event that Contractor proceeds with any change in Work without a Change Order executed by the District or Construction Change Directive, Contractor waives any claim of additional compensation or time for that additional work. Under no circumstances shall Contractor be entitled to any claim of additional

compensation or time not expressly requested by Contractor in a Proposed Change Order or approved by District in an executed Change Order.

17.1.4 □ Contractor understands, acknowledges, and agrees that the reason for District authorization 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 a change in Work becomes unnecessary.

17.2 □ **Architect Authority**

The Architect will have authority to order minor changes in the Work not involving any adjustment in the Contract Price, or an extension of the Contract Time, or a change that is inconsistent with the intent of the Contract Documents. These changes shall be effected by written Change Order, Construction Change Directive, by Architect's response(s) to RFI(s), or by Architect's Supplemental Instructions ("ASI").

17.3 □ **Change Orders**

17.3.1 □ A Change Order is a written instrument prepared and issued by the District and/or the Architect and signed by the District (as authorized by the District's Governing Board), the Contractor, the Architect, and approved by the Project Inspector (if necessary) and DSA (if necessary), stating their agreement regarding all of the following:

17.3.1.1 □ A description of a change in the Work;

17.3.1.2 □ The amount of the adjustment in the Contract Price, if any; and

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

17.4 □ **Construction Change Directives**

17.4.1 □ A Construction Change Directive is a written order prepared and issued by the District, the Construction Manager, and/or the Architect and signed by the District and the Architect, directing a change in the Work. The District may, as provided by law, by Construction Change Directive and without invalidating the Contract, order changes in the Work consisting of additions, deletions, or other revisions. The adjustment to the Contract Price or Time, if any, is subject to the provisions of this section regarding Changes in the Work. If all or a portion of the Project is being funded by funds requiring approval by the State Allocation Board ("SAB"), these revisions may be subject to compensation once approval of same is received and funded by the SAB, and funds are released by the Office of Public School Construction ("OPSC"). Any dispute as to the adjustment in the Contract Price, if any, of the Construction Change Directive or timing of payment shall be resolved pursuant to the Payment and Claims and Disputes provisions herein.

17.4.2 □ The District may issue a Construction Change Directive in the absence of agreement on the terms of a Change Order.

17.5 □ **Force Account Directives**

17.5.1 □ When work, for which a definite price has not been agreed upon in advance, is to be paid for on a force account basis, all direct costs necessarily

incurred and paid by the Contractor for labor, material, and equipment used in the performance of that Work, shall be subject to the approval of the District and compensation will be determined as set forth herein.

17.5.2 □ The District will issue a Force Account Directive to proceed with the Work on a force account basis, and a not-to-exceed budget will be established by the District.

17.5.3 □ All requirements regarding direct cost for labor, labor burden, material, equipment, and markups on direct costs for overhead and profit described in this section shall apply to Force Account Directives. However, the District will only pay for actual costs verified in the field by the District or its authorized representative(s) on a daily basis.

17.5.4 □ The Contractor shall be responsible for all cost related to the administration of Force Account Directive. The markup for overhead and profit for Contractor modifications shall be full compensation to the Contractor to administer Force Account Directive, and Contractor shall not be entitled to separately recover additional amounts for overhead and/or profit.

17.5.5 □ The Contractor shall notify the District or its authorized representative(s) at least twenty-four (24) hours prior to proceeding with any of the force account work. Furthermore, the Contractor shall notify the District when it has consumed eighty percent (80%) of the budget, and shall not exceed the budget unless specifically authorized in writing by the District. The Contractor will not be compensated for force account work in the event that the Contractor fails to timely notify the District regarding the commencement of force account work, or exceeding the force account budget.

17.5.6 □ The Contractor shall diligently proceed with the work, and on a daily basis, submit a daily force account report on a form supplied by the District no later than 5:00 p.m. each day. The report shall contain a detailed itemization of the daily labor, material, and equipment used on the force account work only. The names of the individuals performing the force account work shall be included on the daily force account reports. The type and model of equipment shall be identified and listed. The District will review the information contained in the reports, and sign the reports no later than the next work day, and return a copy of the report to the Contractor for their records. The District will not sign, nor will the Contractor receive compensation for work the District cannot verify. The Contractor will provide a weekly force account summary indicating the status of each Force Account Directive in terms of percent complete of the not-to-exceed budget and the estimated percent complete of the work.

17.5.7 □ In the event the Contractor and the District reach a written agreement on a set cost for the work while the work is proceeding based on a Force Account Directive, the Contractor's signed daily force account reports shall be discontinued and all previously signed reports shall be invalid.

17.6 □ **Price Request**

17.6.1 □ **Definition of Price Request**

A Price Request ("PR") is a written request prepared by the Architect requesting the Contractor to submit to the District and the Architect an estimate of the effect of a proposed change in the Work on the Contract Price and the Contract Time.

17.6.2 Scope of Price Request

A Price Request shall contain adequate information, including any necessary Drawings and Specifications, to enable Contractor to provide the cost breakdowns required herein. The Contractor shall not be entitled to any additional compensation for preparing a response to a Price Request, whether ultimately accepted or not.

17.7 Proposed Change Order

17.7.1 Definition of Proposed Change Order

A Proposed Change Order ("PCO") is a written request prepared by the Contractor requesting that the District and the Architect issue a Change Order based upon a proposed change to the Work.

17.7.2 Changes in Contract Price

A PCO shall include breakdowns and backup documentation pursuant to the revisions herein and sufficient, in the District's judgment, to validate any change in Contract Price. In no case shall Contractor or any of its Subcontractors be permitted to reserve rights for additional compensation for Change Order Work.

17.7.3 Changes in Time

A PCO shall also include any changes in 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 Construction Schedule as defined in the Contract Documents. The Contractor shall justify the proposed change in time by submittal of a schedule analysis that accurately shows the impact of the change on the critical path of the Construction Schedule ("Time Impact Analysis"). If Contractor fails to request a time extension in a PCO, including the Time Impact Analysis, then the Contractor is thereafter precluded from requesting, and waives any right to request, additional time and/or claim a delay. In no case shall Contractor or any of its Subcontractors be permitted to reserve rights for additional time for Change Order Work. A PCO that leaves the amount of time requested blank, or states that such time requested is "to be determined", is not permitted and shall also constitute a waiver of any right to request additional time and/or claim a delay.

17.7.4 Unknown and/or Unforeseen Conditions

If there is an Allowance, then Contractor must submit a Request for Allowance Expenditure Directive, including supporting documentation as described below, to receive authorization for the release of funds from the Allowance. If cost of the unforeseen condition(s) exceed the Allowance, Contractor must submit a PCO requesting an increase in Contract Price and/or Contract Time that is based at least partially on Contractor's assertion that Contractor has encountered unknown and/or unforeseen condition(s) on the Project, then Contractor shall base the PCO on provable information that, beyond a reasonable doubt and to the District's satisfaction, demonstrates that the unknown and/or unforeseen condition(s) were

actually unknown and/or unforeseen and that the condition(s) were reasonably unknown and/or unforeseen. If not, the District shall deny the PCO as unsubstantiated, and the Contractor shall complete the Project without any increase in Contract Price and/or Contract Time based on that PCO.

17.7.5 Time to Submit Proposed Change Order

Contractor shall submit its PCO within five (5) working days of the date Contractor discovers, or reasonably should have discovered, the circumstances giving rise to the PCO, unless additional time to submit a PCO is granted in writing by the District. Time is of the essence in Contractor's submission of PCOs so that the District can promptly investigate the basis for the PCO. Accordingly, if Contractor fails to submit its PCO within this timeframe, Contractor waives, releases, and discharges any right to assert or claim any entitlement to an adjustment of the Contract Price and/or Time based on circumstances giving rise to the PCO.

17.7.6 Proposed Change Order Certification

In submitting a PCO, Contractor certifies and affirms that the cost and/or time request is submitted in good faith, that the cost and/or time request is accurate and in accordance with the provisions of the Contract Documents, and the Contractor submits the cost and/or request for extension of time recognizing the significant civil penalties and treble damages which follow from making a false claim or presenting a false claim under Government Code section 12650 et seq.

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17.8 **Format for Proposed Change Order**

17.8.1 The following format shall be used as applicable by the District and the Contractor (e.g. Change Orders, PCO's) to communicate proposed additions and deductions to the Contract, supported by attached documentation. Any spaces left blank will be deemed no change to cost or time.

	<u>WORK PERFORMED OTHER THAN BY CONTRACTOR</u>	<u>ADD</u>	<u>DEDUCT</u>
(a)	<u>Material</u> (attach suppliers' invoice or itemized quantity and unit cost plus sales tax)		
(b)	<u>Add Labor</u> (attach itemized hours and rates, fully encumbered)		
(c)	<u>Add Equipment</u> (attach suppliers' invoice)		
(d)	<u>Subtotal</u>		
(e)	<u>Add overhead and profit for any and all tiers of Subcontractor</u> , the total not to exceed ten percent (10%) of Item (d)		
(f)	<u>Subtotal</u>		
(g)	<u>Add Overhead and Profit for Contractor</u> , not to exceed five percent (5%) of Item (f)		
(h)	<u>Subtotal</u>		
(i)	<u>Add Bond and Insurance</u> , not to exceed one and a half percent (1.5%) of Item (h)		
(j)	<u>TOTAL</u>		
(k)	<u>Time</u> (zero unless indicated; "TBD" not permitted)	____ Calendar Days	

	<u>WORK PERFORMED BY CONTRACTOR</u>	<u>ADD</u>	<u>DEDUCT</u>
(a)	<u>Material</u> (attach itemized quantity and unit cost plus sales tax)		
(b)	<u>Add Labor</u> (attach itemized hours and rates, fully encumbered)		
(c)	<u>Add Equipment</u> (attach suppliers' invoice)		
(d)	<u>Subtotal</u>		
(e)	<u>Add Overhead and Profit for Contractor</u> , not to exceed fifteen percent (15%) of Item (d)		
(f)	<u>Subtotal</u>		
(g)	<u>Add Bond and Insurance</u> , not to exceed one and a half percent (1.5%) of Item (f)		
(h)	<u>TOTAL</u>		
(i)	<u>Time</u> (zero unless indicated; "TBD" not permitted)	____ Calendar Days	

17.8.2 Labor. Contractor shall be compensated for the costs of labor actually and directly utilized in the performance of the Work. Such labor costs shall be limited to field labor for which there is a prevailing wage rate classification. Wage rates for labor shall not exceed the prevailing wage rates in the locality of the Site and shall be in the labor classification(s) necessary for the performance of the Work. Labor costs shall exclude costs incurred by the Contractor in preparing estimate(s) of

the costs of the change in the Work, in the maintenance of records relating to the costs of the change in the Work, coordination and assembly of materials and information relating to the change in the Work or performance thereof, or the supervision and other overhead and general conditions costs associated with the change in the Work or performance thereof, including but not limited to the cost for the job superintendent.

17.8.3 Materials. Contractor shall be compensated for the costs of materials necessarily and actually used or consumed in connection with the performance of the change in the Work. Costs of materials may include reasonable costs of transportation from a source closest to the Site of the Work and delivery to the Site. If discounts by material suppliers are available for materials necessarily used in the performance of the change in the Work, they shall be credited to the District. If materials necessarily used in the performance of the change in the Work are obtained from a supplier or source owned in whole or in part by the Contractor, compensation therefor shall not exceed the current wholesale price for such materials. If, in the reasonable opinion of the District, the costs asserted by the Contractor for materials in connection with any change in the Work are excessive, or if the Contractor fails to provide satisfactory evidence of the actual costs of such materials from its supplier or vendor of the same, the costs of such materials and the District's obligation to pay for the same shall be limited to the then lowest wholesale price at which similar materials are available in the quantities required to perform the change in the Work. The District may elect to furnish materials for the change in the Work, in which event the Contractor shall not be compensated for the costs of furnishing such materials or any mark-up thereon.

17.8.4 Equipment. As a precondition to the District's duty to pay for Equipment rental or loading and transportation, Contractor shall provide satisfactory evidence of the actual costs of Equipment from the supplier, vendor or rental agency of same. Contractor shall be compensated for the actual cost of the necessary and direct use of Equipment in the performance of the change in the Work. Use of such Equipment in the performance of the change in the Work shall be compensated in increments of fifteen (15) minutes. Rental time for Equipment moved by its own power shall include time required to move such Equipment to the site of the Work from the nearest available rental source of the same. If Equipment is not moved to the Site by its own power, Contractor will be compensated for the loading and transportation costs in lieu of rental time. The foregoing notwithstanding, neither moving time or loading and transportation time shall be allowed if the Equipment is used for performance of any portion of the Work other than the change in the Work. Unless prior approval in writing is obtained by the Contractor from the Architect, the Project Inspector and the District, no costs or compensation shall be allowed for time while Construction Equipment is inoperative, idle or on standby, for any reason. Contractor shall not be entitled to an allowance or any other compensation for Equipment or tools used in the performance of change in the Work where such Equipment or tools have a replacement value of \$500.00 or less. Equipment costs claimed by the Contractor in connection with the performance of any Work shall not exceed rental rates established by distributors or construction equipment rental agencies in the locality of the Site; any costs asserted which exceed such rental rates shall not be allowed or paid. Unless otherwise specifically approved in writing by the Architect, the Project Inspector and the District, the allowable rate for the use of Equipment in connection with the Work shall constitute full compensation to the Contractor for the cost of rental, fuel, power, oil, lubrication, supplies, necessary attachments, repairs or maintenance of any kind, depreciation, storage, insurance,

labor (exclusive of labor costs of the Equipment operator), and any and all other costs incurred by the Contractor incidental to the use of such Equipment.

17.8.5 **Overhead and Profit.** The phrase "Overhead and Profit" shall include field and office supervisors and assistants, watchperson, use of small tools, consumable, insurance other than construction bonds and insurance required herein, and general field and home office expenses.

17.9 **Change Order Certification**

17.9.1 All Change Orders and PCOs must include the following certification by the Contractor:

17.9.1.1 The undersigned Contractor approves the foregoing as to the changes, if any, to the Contract Price specified for each item, and as to the extension of time allowed, if any, for completion of the entire Work as stated herein, and agrees to furnish all labor, materials, and service, and perform all work necessary to complete any additional work specified for the consideration stated herein. Submission of sums which have no basis in fact or which Contractor knows are false 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. It is understood that the changes herein to the Contract shall only be effective when approved by the governing board of the District.

17.9.1.2 It is expressly understood that the value of the extra Work or changes expressly includes any and all of the Contractor's costs and expenses, direct and indirect, resulting from additional time required on the Project or resulting from delay to the Project. Contractor is not entitled to separately recover amounts for overhead or other indirect costs. Any costs, expenses, damages, or time extensions not included are deemed waived.

17.10 **Determination of Change Order Cost**

17.10.1 The amount of the increase or decrease in the Contract Price from a Change Order, if any, shall be determined in one or more of the following ways as applicable to a specific situation and at the District's discretion:

17.10.1.1 District acceptance of a PCO;

17.10.1.2 By unit prices contained in Contractor's original bid;

17.10.1.3 By agreement between District and Contractor.

17.11 **Deductive Change Orders**

All deductive Change Order(s) must be prepared pursuant to the provisions herein. Where a portion of the Work is deleted from the Contract, the reasonable value of the deducted work less the value of work performed shall be considered the appropriate deduction. The value submitted on the Schedule of Values shall be used to calculate the credit amount unless the bid documentation is being held in escrow as part of the Contract Documents. Unit Prices, if any, may be used in District's discretion in calculating reasonable value. If Contractor offers a proposed amount for a deductive Change Order(s), Contractor shall include a minimum of five percent (5%) total profit

and overhead to be deducted with the amount of the work of the Change Order(s). If Subcontractor work is involved, Subcontractors shall also include a minimum of five percent (5%) profit and overhead to be deducted with the amount of its deducted work. Any deviation from this provision shall not be allowed.

17.12 Addition or Deletion of Alternate Bid Item(s)

If the Bid Form and Proposal includes proposal(s) for Alternate Bid Item(s), during Contractor's performance of the Work, the District may elect to add or delete any such Alternate Bid Item(s) if not included in the Contract at the time of award. If the District elects to add or delete Alternate Bid Item(s) after Contract award, the cost or credit for such Alternate Bid Item(s) shall be as set forth in the Bid Form and Proposal unless the parties agree to a different price and the Contract Time shall be adjusted by the number of days allocated in the Contract Documents. If days are not allocated in the Contract Documents, the Contract Time shall be equitably adjusted.

17.13 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 omission in the Work as provided herein.

17.14 Accounting Records

With respect to portions of the Work performed by Change Orders and Construction Change Directives, the Contractor shall keep and maintain cost-accounting records satisfactory to the District, including, without limitation, Job Cost Reports as provided in these General Conditions, 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. Such records shall include without limitation hourly records for Labor and Equipment and itemized records of materials and Equipment used that day in connection with the performance of any Work. All records maintained hereunder shall be subject to inspection, review and/or reproduction by the District, the Architect or the Project Inspector upon request. In the event that the Contractor fails or refuses, for any reason, to maintain or make available for inspection, review and/or reproduction such records, the District's reasonable good faith determination of the extent of adjustment to the Contract Price shall be final, conclusive, dispositive and binding upon Contractor.

17.15 Notice Required

If the Contractor desires to make a claim for an increase in the Contract Price, or any extension in the Contract Time for completion, it shall notify the District pursuant to the provisions herein, including the Article on Claims and Disputes. No claim 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 Change Order.

17.16□ Applicability to Subcontractors

Any requirements under this Article shall be equally applicable to Change Orders or Construction Change Directives issued to Subcontractors by the Contractor to the extent as required by the Contract Documents.

17.17□ Alteration to Change Order Language

Contractor shall not alter Change Orders or reserve time in Change Orders. Change Orders altered in violation of this provision, if in conflict with the terms set forth herein, shall be construed in accordance with the terms set forth herein. Contractor shall execute finalized Change Orders and proceed under the provisions herein with proper notice.

17.18□ Failure of Contractor to Execute Change Order

Contractor shall be in default of the Contract if Contractor fails to execute a Change Order when the Contractor agrees with the addition and/or deletion of the Work in that Change Order.

18.□ REQUEST FOR INFORMATION

18.1 Any Request for Information shall reference all applicable Contract Document(s), including Specification section(s), detail(s), page number(s), drawing number(s), and sheet number(s), etc. The Contractor shall make suggestions and interpretations of the issue raised by each Request for Information. A Request for Information cannot modify the Contract Price, Contract Time, or the Contract Documents. Upon request by the District, Contractor shall provide an electronic copy of the Request for Information in addition to the hard copy.

18.2 The Contractor shall be responsible for any costs incurred for professional services that District may deduct from any amounts owing to the Contractor, if a Request for Information requests an interpretation or decision of a matter where the information sought is equally available to the party making the request. District, at its sole discretion, shall deduct from and/or invoice Contractor for all the professional services arising herein.

19.□ PAYMENTS

19.1□ Contract Price

The 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.

19.2□ Applications for Progress Payments

19.2.1□ Procedure for Applications for Progress Payments

19.2.1.1□ Application for Progress Payment

19.2.1.1.1□ Not before the fifth (5th) day of each calendar month during the progress of the Work, Contractor shall submit to the District and the

Architect an itemized Application for Payment for operations completed in accordance with the Schedule of Values. Such application shall be notarized, if required, and supported by the following or each portion thereof unless waived by the District in writing:

19.2.1.1.1.1 ☐ The amount paid to the date of the Application to the Contractor, to all its Subcontractors, and all others furnishing labor, material, or equipment for its Contract;

19.2.1.1.1.2 ☐ The amount being requested under the Application for Payment 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;

19.2.1.1.1.3 ☐ The balance that will be due to each of such entities after said payment is made;

19.2.1.1.1.4 ☐ A certification that the As-Built Drawings and annotated Specifications are current;

19.2.1.1.1.5 ☐ Itemized breakdown of work done for the purpose of requesting partial payment;

19.2.1.1.1.6 ☐ An updated and acceptable construction schedule in conformance with the provisions herein;

19.2.1.1.1.7 ☐ The additions to and subtractions from the Contract Price and Contract Time;

19.2.1.1.1.8 ☐ A total of the retentions held;

19.2.1.1.1.9 ☐ Material invoices, evidence of equipment purchases, rentals, and other support and details of cost as the District may require from time to time;

19.2.1.1.1.10 ☐ The percentage of completion of the Contractor's Work by line item;

19.2.1.1.1.11 ☐ Schedule of Values updated from the preceding Application for Payment;

19.2.1.1.1.12 ☐ A duly completed and executed conditional waiver and release upon progress payment compliant with Civil Code section 8132 from the Contractor and each subcontractor of any tier and supplier to be paid from the current progress payment;

19.2.1.1.1.13 ☐ A duly completed and executed unconditional waiver and release upon progress payment compliant with Civil Code section 8134 from the Contractor and each subcontractor of any tier and supplier that was paid from the previous progress payment(s); and

19.2.1.1.1.14 □ A certification by the Contractor of the following:

The Contractor warrants title to all Work performed as of the date of this payment application has been completed in accordance with the Contract Documents for the Project. The Contractor further warrants that all amounts have been paid for work which previous Certificates for Payment were issued and payments received and all Work performed as of the date of this payment application is free and clear of liens, claims, security interests, or encumbrances in favor of the Contractor, Subcontractors, material and equipment suppliers, workers, or other persons or entities making a claim by reason of having provided labor, materials, and equipment relating to the Work, except those of which the District has been informed. Submission of sums which have no basis in fact or which Contractor knows are false 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.

19.2.1.1.1.15 □ The Contractor shall be subject to the False Claims Act set forth in Government Code section 12650 et seq. for information provided with any Application for Progress Payment.

19.2.1.1.1.16 □ All remaining certified payroll records ("CPR(s)") for each journeyman, apprentice, worker, or other employee employed by the Contractor and/or each Subcontractor in connection with the Work for the period of the Application for Payment. As indicated herein, the District shall not make any payment to Contractor until:

19.2.1.1.1.16.1 □ Contractor and/or its Subcontractor(s) provide electronic CPRs weekly for all weeks any journeyman, apprentice, worker or other employee was employed in connection with the Work directly to the DIR, or within ten (10) days of any request by the District or the DIR, and

19.2.1.1.1.16.2 □ Any delay in Contractor and/or its Subcontractor(s) providing CPRs in a timely manner may directly delay the Contractor's payment.

19.2.1.1.2 □ Applications received after June 20th will not be paid until the second week of July and applications received after December 12th will not be paid until the first week of January.

19.2.2 □ **Prerequisites for Progress Payments**

19.2.2.1 □ **First Payment Request:** The following items, if applicable, must be completed before the District will accept and/or process the Contractor's first payment request:

19.2.2.1.1 □ Installation of the Project sign;

19.2.2.1.2 □ Installation of field office;

19.2.2.1.3 □ Installation of temporary facilities and fencing;

- 19.2.2.1.4** ☐ Schedule of Values;
 - 19.2.2.1.5** ☐ Contractor's Construction Schedule;
 - 19.2.2.1.6** ☐ Schedule of unit prices, if applicable;
 - 19.2.2.1.7** ☐ Submittal Schedule;
 - 19.2.2.1.8** ☐ Receipt by Architect of all submittals due as of the date of the payment application;
 - 19.2.2.1.9** ☐ Copies of necessary permits;
 - 19.2.2.1.10** ☐ Copies of authorizations and licenses from governing authorities;
 - 19.2.2.1.11** ☐ Initial progress report;
 - 19.2.2.1.12** ☐ Surveyor qualifications;
 - 19.2.2.1.13** ☐ Written acceptance of District's survey of rough grading, if applicable;
 - 19.2.2.1.14** ☐ List of all Subcontractors, with names, license numbers, telephone numbers, and Scope of Work;
 - 19.2.2.1.15** ☐ All bonds and insurance endorsements; and
 - 19.2.2.1.16** ☐ Resumes of Contractor's project manager, and if applicable, job site secretary, record documents recorder, and job site superintendent.
- 19.2.2.2** ☐ **Second Payment Request:** The District will not process the second payment request until and unless all submittals and Shop Drawings have been accepted for review by the Architect.
- 19.2.2.3** ☐ **No Waiver of Criteria:** Any payments made to Contractor where criteria set forth herein have not been met shall not constitute a waiver of said criteria by District. Instead, such payment shall be construed as a good faith effort by District to resolve differences so Contractor may pay its Subcontractors and suppliers. Contractor agrees that failure to submit such items may constitute a breach of contract by Contractor and may subject Contractor to termination.

19.3 ☐ **Progress Payments**

19.3.1 ☐ **District's Approval of Application for Payment**

19.3.1.1 ☐ Upon receipt of an Application for Payment, The District shall act in accordance with both of the following:

- 19.3.1.1.1** ☐ Each Application for Payment shall be reviewed by the District as soon as practicable after receipt for the purpose of determining that the Application for Payment is a proper Application for Payment.

19.3.1.1.2 Any Application for Payment determined not to be a proper Application for Payment suitable for payment shall be returned to the Contractor as soon as practicable, but not later than seven (7) days, after receipt. An Application for Payment returned pursuant to this paragraph shall be accompanied by a document setting forth in writing the reasons why the Application for Payment is not proper. The number of days available to the District to make a payment without incurring interest pursuant to this section shall be reduced by the number of days by which the District exceeds this seven-day return requirement.

19.3.1.1.3 An Application for Payment shall be considered properly executed if funds are available for payment of the Application for Payment, and payment is not delayed due to an audit inquiry by the financial officer of the District.

19.3.1.2 The District's review of the Contractor's Application for Payment will be based on the District's and the Architect's observations at the Site and the data comprising the Application for Payment that the Work has progressed to the point indicated and that, to the best of the District's and the Architect's knowledge, information, and belief, the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to:

19.3.1.2.1 Observation of the Work for general conformance with the Contract Documents,

19.3.1.2.2 Results of subsequent tests and inspections,

19.3.1.2.3 Minor deviations from the Contract Documents correctable prior to completion, and

19.3.1.2.4 Specific qualifications expressed by the Architect.

19.3.1.3 District's approval of the certified Application for Payment shall be based on Contractor complying with all requirements for a fully complete and valid certified Application for Payment.

19.3.2 Payments to Contractor

19.3.2.1 Within thirty (30) days after approval of the Application for Payment, Contractor shall be paid a sum equal to ninety-five percent (95%) of the value of the Work performed (as verified by Architect and Inspector and certified by Contractor) up to the last day of the previous month, less the aggregate of previous payments and amount to be withheld. The value of the Work completed shall be Contractor's best estimate. No inaccuracy or error in said estimate shall operate to release the Contractor, or any Surety upon any bond, from damages arising from such Work, or from the District's right to enforce each and every provision of this Contract, and the District shall have the right subsequently to correct any error made in any estimate for payment.

19.3.2.2 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.

19.3.2.3 If the District fails to make any progress payment within thirty (30) days after receipt of an undisputed and properly submitted Application for Payment from the Contractor, the District shall pay interest to the Contractor equivalent to the legal rate set forth in subdivision (a) of Section 685.010 of the Code of Civil Procedure.

19.3.3 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. Notwithstanding any payment, the District may enforce each and every provision of this Contract. The District may correct or require correction of any error subsequent to any payment.

19.4 Decisions to Withhold Payment

19.4.1 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 herein 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 any of the following:

19.4.1.1 Defective Work not remedied within **FORTY-EIGHT (48)** hours of written notice to Contractor.

19.4.1.2 Stop Payment Notices or other liens served upon the District as a result of the Contract. Contractor agrees that the District may withhold up to 125% of the amount claimed in the Stop Payment Notice to answer the claim and to provide for the District's reasonable cost of any litigation pursuant to the stop payment notice.

19.4.1.3 Liquidated damages assessed against the Contractor.

19.4.1.4 The cost of completion of the Contract if there exists a reasonable doubt that the Work can be completed for the unpaid balance of the Contract Price or by the completion date.

19.4.1.5 Damage to the District or other contractor(s).

19.4.1.6 Unsatisfactory prosecution of the Work by the Contractor.

19.4.1.7 Failure to store and properly secure materials.

19.4.1.8 Failure of the Contractor to submit, on a timely basis, proper, sufficient, and acceptable documentation required by the Contract Documents, including, without limitation, a Construction Schedule, Schedule of Submittals, Schedule of Values, Monthly Progress Schedules, Shop Drawings, Product Data and samples, Proposed product lists, executed Change Orders, and/or verified reports.

19.4.1.9 Failure of the Contractor to maintain As-Built Drawings.

19.4.1.10 ☐ Erroneous estimates by the Contractor of the value of the Work performed, or other false statements in an Application for Payment.

19.4.1.11 ☐ Unauthorized deviations from the Contract Documents.

19.4.1.12 ☐ Failure of the Contractor to prosecute the Work in a timely manner in compliance with the Construction Schedule, established progress schedules, and/or completion dates.

19.4.1.13 ☐ Failure to provide acceptable electronic certified payroll records, as required by the Labor Code, by these Contract Documents, or by written request; for each journeyman, apprentice, worker, or other employee employed by the Contractor and/or by each Subcontractor in connection with the Work for the period of the Application for Payment or if payroll records are delinquent or inadequate.

19.4.1.14 ☐ Failure to properly pay prevailing wages as required in Labor Code section 1720 et seq., failure to comply with any other Labor Code requirements, and/or failure to comply with labor compliance monitoring and enforcement by the DIR.

19.4.1.15 ☐ Allowing an unregistered subcontractor, as described in Labor Code section 1725.5, to engage in the performance of any work under this Contract.

19.4.1.16 ☐ Failure to comply with any applicable federal statutes and regulations regarding minimum wages, withholding, payrolls and basic records, apprentice and trainee employment requirements, equal employment opportunity requirements, Copeland Act requirements, Davis-Bacon Act and related requirements, Contract Work Hours and Safety Standards Act requirements, if applicable.

19.4.1.17 ☐ Failure to properly maintain or clean up the Site.

19.4.1.18 ☐ Failure to timely indemnify, defend, or hold harmless the District.

19.4.1.19 ☐ Any payments due to the District, including but not limited to payments for failed tests, utilities changes, or permits.

19.4.1.20 ☐ Failure to pay Subcontractor(s) or supplier(s) as required by law and by the Contract Documents.

19.4.1.21 ☐ Failure to pay any royalty, license or similar fees.

19.4.1.22 ☐ Contractor is otherwise in breach, default, or in substantial violation of any provision of this Contract.

19.4.1.23 ☐ Failure to perform any implementation and/or monitoring required by any SWPPP for the Project and/or the imposition of any penalties or fines therefore whether imposed on the District or Contractor.

19.4.2 Reallocation of Withheld Amounts

19.4.2.1 District may, in its discretion, apply any withheld amount to pay outstanding claims or obligations as defined herein. In so doing, District shall make such payments on behalf of Contractor. If any payment is so made by District, then that amount shall be considered a payment made under Contract by District to Contractor and District shall not be liable to Contractor for any payment made in good faith. These payments may be made without prior judicial determination of claim or obligation. District will render Contractor an accounting of funds disbursed on behalf of Contractor.

19.4.2.2 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 **FORTY-EIGHT (48)** hours' 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 that is damaged, defective, or not done in accordance with Contract provisions, an equitable reduction in the Contract Price (of at least one hundred fifty percent (150%) of the estimated reasonable value of the nonconforming Work) shall be made therefor.

19.4.3 Payment After Cure

When Contractor removes the grounds for declining approval, 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.

19.5 Subcontractor Payments

19.5.1 Payments to Subcontractors

No later than seven (7) days after receipt, or pursuant to Business and Professions Code section 7108.5 and Public Contract Code section 7107, 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 its Sub-subcontractors in a similar manner.

19.5.2 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.

19.5.3 Joint Checks

District shall have the right in its sole discretion, if necessary for the protection of the District, to issue joint checks made payable to the Contractor and Subcontractors and/or 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, or a material or equipment supplier, any obligation from the District to such Subcontractor or a material or equipment supplier, or rights in such Subcontractor or a material or equipment supplier against the District.

20. COMPLETION OF THE WORK

20.1 Completion

20.1.1 District will accept completion of Contract and have the Notice of Completion recorded when the entire Work shall have been completed to the satisfaction of District.

20.1.2 The Work may only be accepted as complete by action of the governing board of the District.

20.1.3 District, at its sole option, may accept completion of Contract and have the Notice of Completion recorded when the entire Work shall have been completed to the satisfaction of District, except for minor corrective items, as distinguished from incomplete items. If Contractor fails to complete all minor corrective items within fifteen (15) days after the date of the District's acceptance of completion, District shall withhold from the final payment one hundred fifty percent (150%) of an estimate of the amount sufficient to complete the corrective items, as determined by District, until the item(s) are completed.

20.1.4 At the end of the 15-day period, if there are any items remaining to be corrected, District may elect to proceed as provided herein related to adjustments to Contract Price, and/or District's right to perform the Work of the Contractor.

20.2 Close-Out/Certification Procedures

20.2.1 Punch List

The Contractor shall notify the Architect when Contractor considers the Work complete. Upon notification, Architect will prepare a list of minor items to be completed or corrected ("Punch List"). The Contractor and/or its Subcontractors shall proceed promptly to complete and correct items on the Punch List. Failure to include an item on Punch List does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

20.2.2 Close-Out/Certification Requirements

20.2.2.1 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.

20.2.2.2 Record Drawings and Record Specifications

20.2.2.2.1 Contractor shall provide exact Record Drawings of the Work ("As-Builts") and Record Specifications upon completion of the Project and as a condition precedent to approval of final payment.

20.2.2.2.2 Contractor shall obtain the Inspector's approval of the corrected prints and employ a competent draftsman to transfer the Record Drawings information to the most current version of AutoCAD that is, at that time, currently utilized for plan check submission by either the District, the Architect, OPSC, and/or DSA, and print a complete set of transparent sepias. When completed, Contractor shall deliver corrected sepias and diskette/CD/other data storage device acceptable to District with AutoCAD file to the District.

20.2.2.2.3 Contractor is liable and responsible for any and all inaccuracies in the Record Drawings and Record Specifications, even if inaccuracies become evident at a future date.

20.2.2.3 Maintenance Manuals: Contractor shall prepare all operation and maintenance manuals and date as indicated in the Specifications.

20.2.2.4 Source Programming: Contractor shall provide all source programming for all items in the Project.

20.2.2.5 Verified Reports: Contractor shall completely and accurately fill out and file forms DSA 6-C or DSA 152 (or current form), as appropriate. Refer to section 4-336 and section 4-343 of Part 1, Title 24 of the California Code of Regulations.

20.3 Final Inspection

20.3.1 Contractor shall comply with Punch List procedures as provided herein, and maintain the presence of a Project Superintendent and 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 without District's prior written approval. Upon receipt of Contractor's written notice that all of the Punch List items have been fully completed and the Work is ready for final inspection and District acceptance, Architect and Project Inspector will inspect the Work and shall submit to Contractor and District a final inspection report noting the Work, if any, required in order to complete in accordance with the Contract Documents. Absent unusual circumstances, this report shall consist of the Punch List items not yet satisfactorily completed.

20.3.2 Upon Contractor's completion of all items on the Punch List and any other uncompleted portions of the Work, the Contractor shall notify the District and Architect, who shall again inspect such Work. If the Architect finds the Work complete and acceptable under the Contract Documents, the Architect will notify Contractor, who shall then jointly submit to the Architect and the District its final Application for Payment.

20.3.3 Final Inspection Requirements

20.3.3.1 Before calling for final inspection, Contractor shall determine that the following have been performed:

20.3.3.1.1 The Work has been completed.

20.3.3.1.2 All life safety items are completed and in working order.

- 20.3.3.1.3** □ Mechanical and electrical Work are complete and tested, fixtures are in place, connected, and ready for tryout.
- 20.3.3.1.4** □ Electrical circuits scheduled in panels and disconnect switches labeled.
- 20.3.3.1.5** □ Painting and special finishes complete.
- 20.3.3.1.6** □ Doors complete with hardware, cleaned of protective film, relieved of sticking or binding, and in working order.
- 20.3.3.1.7** □ Tops and bottoms of doors sealed.
- 20.3.3.1.8** □ Floors waxed and polished as specified.
- 20.3.3.1.9** □ Broken glass replaced and glass cleaned.
- 20.3.3.1.10** □ Grounds cleared of Contractor's equipment, raked clean of debris, and trash removed from Site.
- 20.3.3.1.11** □ Work cleaned, free of stains, scratches, and other foreign matter, and damaged and broken material replaced.
- 20.3.3.1.12** □ Finished and decorative work shall have marks, dirt, and superfluous labels removed.
- 20.3.3.1.13** □ Final cleanup, as provided herein.

20.4 □ **Costs of Multiple Inspections**

More than two (2) requests of the District to make a final inspection shall be considered an additional service of District, Architect, Construction Manager, and/or Project Inspector, and all subsequent costs will be invoiced to Contractor and if funds are available, withheld from remaining payments.

20.5 □ **Partial Occupancy or Use Prior to Completion**

20.5.1 □ **District's Rights to Occupancy**

The District may occupy or use any completed or partially completed portion of the Work at any stage, and such occupancy shall not constitute the District's Final Acceptance of any part of the Work. Neither the District's Final Acceptance, the making of Final Payment, any provision in Contract Documents, nor the use or occupancy of the Work, in whole or in part, by District shall constitute acceptance of Work not in accordance with the Contract Documents nor relieve the Contractor or the Contractor's Performance Bond Surety from liability with respect to any warranties or responsibility for faulty or defective Work or materials, equipment and workmanship incorporated therein. In the event that the District occupies or uses any completed or partially completed portion of the Work, the Contractor shall remain responsible 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 unless the Contractor requests in writing, and the District agrees, to otherwise divide those responsibilities. Any

dispute as to responsibilities shall be resolved pursuant to the Claims and Disputes provisions herein, with the added provision that during the dispute process, the District shall have the right to occupy or use any portion of the Work that it needs or desires to use.

20.5.2□ Inspection Prior to Occupancy or Use

Immediately prior to 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.

20.5.3□ No Waiver

Unless otherwise agreed upon, partial or entire occupancy or use of a portion or portions of the Work shall not constitute beneficial occupancy or District's acceptance of the Work not complying with the requirements of the Contract Documents.

21.□ FINAL PAYMENT AND RETENTION

21.1□ Final Payment

Upon receipt and approval of a valid and final Application for Payment, the Architect will issue a final Certificate of Payment. The District shall thereupon jointly inspect the 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 District's acceptance of the Work of the Contractor as fully complete by the Governing Board of the District (that, 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 final payment from the District, pay the amount due Subcontractors.

21.2□ Prerequisites for Final Payment

The following conditions must be fulfilled prior to Final Payment:

21.2.1□ A full release of all Stop Payment Notices served in connection with the Work shall be submitted by Contractor.

21.2.2□ A duly completed and executed conditional waiver and release upon final payment compliant with Civil Code section 8136, from the Contractor and each subcontractor of any tier and supplier to be paid from the final payment.

21.2.3□ A duly completed and executed unconditional waiver and release upon progress payment compliant with Civil Code section 8134, from the Contractor and each subcontractor of any tier and supplier that was paid from the previous progress payments.

21.2.4□ A duly completed and executed Document 00 65 19.26, "AGREEMENT AND RELEASE OF ANY AND ALL CLAIMS" from the Contractor.

21.2.5□ The Contractor shall have made all corrections to the Work that 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.

21.2.6 Each Subcontractor shall have delivered to the Contractor all written guarantees, warranties, applications, and bonds required by the Contract Documents for its portion of the Work.

21.2.7 Contractor must have completed all requirements set forth under "Close-Out/Certification Procedures," including, without limitation, submission of an approved set of complete Record Drawings.

21.2.8 Architect shall have issued its written approval that final payment can be made.

21.2.9 The Contractor shall have delivered to the District all manuals and materials required by the Contract Documents, which must be approved by the District.

21.2.10 The Contractor shall have completed final clean-up as provided herein.

21.3 **Retention**

21.3.1 The retention, less any amounts disputed by the District or that the District has the right to withhold pursuant to provisions herein, shall be paid:

21.3.1.1 After approval by the Architect of the Application and Certificate of Payment,

21.3.1.2 After the satisfaction of the conditions set forth herein, and

21.3.1.3 After forty-five (45) days after the recording of the Notice of Completion by District.

21.3.2 No interest shall be paid on any retention, 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 pursuant to Public Contract Code section 22300.

21.4 **Substitution of Securities**

The District will permit the substitution of securities in accordance with the provisions of Public Contract Code section 22300.

22. **UNCOVERING OF WORK**

If a portion of the Work is covered without Inspector or Architect approval or not in compliance with the Contract Documents, it must, if required in writing by the District, the Project Inspector, or the Architect, be uncovered for the Project Inspector's or the Architect's observation and be corrected, replaced, and/or recovered at the Contractor's expense without change in the Contract Price or Contract Time.

23. NONCONFORMING WORK AND CORRECTION OF WORK

23.1 Nonconforming Work

23.1.1 Contractor shall promptly remove from Premises all Work identified by District as failing to conform to the Contract Documents whether incorporated or not. Contractor shall promptly replace and re-execute its own Work to comply with the Contract Documents without additional expense to the District and shall bear the expense of making good all work of other contractors destroyed or damaged by any removal or replacement pursuant hereto and/or any delays to the District or other Contractors caused thereby.

23.1.2 If Contractor does not remove Work that District has identified as failing to conform to the Contract Documents within a reasonable time, not to exceed **FORTY-EIGHT (48)** hours, District may remove it and may store any material at Contractor's expense. If Contractor does not pay expense(s) of that removal within ten (10) days' time thereafter, District may, upon ten (10) days' written notice, sell any material at auction or at private sale and shall deduct all costs and expenses incurred by the District and/or District may withhold those amounts from payment(s) to Contractor.

23.2 Correction of Work

23.2.1 Correction of Rejected Work

Pursuant to the notice provisions herein, the Contractor shall immediately correct the Work rejected by the District, the Architect, or the Project Inspector 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 additional testing, inspections, and compensation for the Inspector's or the Architect's services and expenses made necessary thereby.

23.2.2 One-Year Warranty Corrections

If, within one (1) year after the date of Completion of the Work or a designated portion thereof, or after the date for commencement of warranties established hereunder, 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. This period of one (1) year 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 hereunder shall survive District's acceptance of the Work under the Contract and termination of the Contract. The District shall give such notice promptly after discovery of the condition.

23.3 District's Right to Perform Work

23.3.1 If the Contractor should neglect to prosecute the Work properly or fail to perform any provisions of this contract, the District, after **FORTY-EIGHT (48)** hours written notice to the Contractor, may, without prejudice to any other remedy it may

have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor.

23.3.2 □ If it is found at any time, before or after completion of the Work, that Contractor has varied from the Drawings and/or Specifications, including, but not limited to, variation in material, quality, form, or finish, or in the amount or value of the materials and labor used, District may require at its option:

23.3.2.1 □ That all such improper Work be removed, remade or replaced, and all work disturbed by these changes be made good by Contractor at no additional cost to the District;

23.3.2.2 □ That the District deduct from any amount due Contractor the sum of money equivalent to the difference in value between the work performed and that called for by the Drawings and Specifications; or

23.3.2.3 □ That the District exercise any other remedy it may have at law or under the Contract Documents, including but not limited to the District hiring its own forces or another contractor to replace the Contractor's nonconforming Work, in which case the District shall either issue a deductive Change Order, a Construction Change Directive, or invoice the Contractor for the cost of that work. Contractor shall pay any invoices within thirty (30) days of receipt of same or District may withhold those amounts from payment(s) to Contractor.

24. □ TERMINATION AND SUSPENSION

24.1 □ District's Right to Terminate Contractor for Cause

24.1.1 □ Grounds for Termination: The District, in its sole discretion, may terminate the Contract and/or terminate the Contractor's right to perform the work of the Contract based upon any of the following:

24.1.1.1 □ Contractor refuses or fails to execute the Work or any separable part thereof with sufficient diligence as will ensure its completion within the time specified or any extension thereof, or

24.1.1.2 □ Contractor fails to complete said Work within the time specified or any extension thereof, or

24.1.1.3 □ Contractor persistently fails or refused to perform Work or provide material of sufficient quality as to be in compliance with Contract Documents; or

24.1.1.4 □ Contractor persistently or repeatedly refuses fails, except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials to complete the Work in the time specified; or

24.1.1.5 □ Contractor fails to make prompt payment to Subcontractors, or for material, or for labor; or

24.1.1.6 □ Contractor persistently disregards laws, or ordinances, or instructions of District; or

24.1.1.7 □ Contractor fails to supply labor, including that of Subcontractors, that is sufficient to prosecute the Work or that can work in harmony with all other elements of labor employed or to be employed on the Work; or

24.1.1.8 □ Contractor or its Subcontractor(s) is/are otherwise in breach, default, or in substantial violation of any provision of this Contract, including but not limited to a lapse in licensing or registration.

24.1.2 □ **Notification of Termination**

24.1.2.1 □ Upon the occurrence at District's sole determination of any of the above conditions, District may, without prejudice to any other right or remedy, serve written notice upon Contractor and its Surety of District's termination of this Contract and/or the Contractor's right to perform the work of the Contract. This notice will contain the reasons for termination. Unless, within three (3) days after the service of the notice, any and all condition(s) shall cease, and any and all violation(s) shall cease, or arrangement satisfactory to District for the correction of the condition(s) and/or violation(s) be made, this Contract shall cease and terminate. Upon Termination, Contractor shall not be entitled to receive any further payment until the entire Work is finished.

24.1.2.2 □ Upon Termination, District may immediately serve written notice of tender upon Surety whereby Surety shall have the right to take over and perform this Contract only if Surety:

24.1.2.2.1 □ Within three (3) days after service upon it of the notice of tender, gives District written notice of Surety's intention to take over and perform this Contract; and

24.1.2.2.2 □ Commences performance of this Contract within three (3) days from date of serving of its notice to District.

24.1.2.3 □ Surety shall not utilize Contractor in completing the Project if the District notifies Surety of the District's objection to Contractor's further participation in the completion of the Project. Surety expressly agrees that any contractor which Surety proposes to fulfill Surety's obligations is subject to District's approval. District's approval shall not be unreasonably withheld, conditioned or delayed.

24.1.2.4 □ If Surety fails to notify District or begin performance as indicated herein, District may take over the Work and execute the Work to completion by any method it may deem advisable at the expense of Contractor and/or its Surety. Contractor and/or its Surety shall be liable to District for any excess cost or other damages the District incurs thereby. Time is of the essence in this Contract. If the District takes over the Work as herein provided, District may, without liability for so doing, take possession of and utilize in completing the Work such materials, appliances, plan, and other property belonging to Contractor as may be on the Site of the Work, in bonded storage, or previously paid for.

24.1.3 Effect of Termination

24.1.3.1 Contractor shall, only if ordered to do so by the District, immediately remove from the Site all or any materials and personal property belonging to Contractor that have not been incorporated in the construction of the Work, or which are not in place in the Work. The District retains the right, but not the obligation, to keep and use any materials and personal property belonging to Contractor that have not been incorporated in the construction of the Work, or which are not in place in the Work. The Contractor and its Surety shall be liable upon the performance bond for all damages caused to the District by reason of the Contractor's failure to complete the Contract.

24.1.3.2 In the event that the District shall perform any portion of, or the whole of the Work, pursuant to the provisions of the General Conditions, the District shall not be liable nor account to the Contractor in any way for the time within which, or the manner in which, the Work is performed by the District or for any changes the District may make in the Work or for the money expended by the District in satisfying claims and/or suits and/or other obligations in connection with the Work.

24.1.3.3 In the event that the Contract is terminated for any reason, no allowances or compensation will be granted for the loss of any anticipated profit by the Contractor or any impact or impairment of Contractor's bonding capacity.

24.1.3.4 If the expense to the District to finish the Work exceeds the unpaid Contract Price, Contractor and Surety shall pay difference to District within twenty-one (21) days of District's request.

24.1.3.5 The District shall have the right (but shall have no obligation) to assume and/or assign to a general contractor or construction manager or other third party who is qualified and has sufficient resources to complete the Work, the rights of the Contractor under its subcontracts with any or all Subcontractors. In the event of an assumption or assignment by the District, no Subcontractor shall have any claim against the District or third party for Work performed by Subcontractor or other matters arising prior to termination of the Contract. The District or any third party, as the case may be, shall be liable only for obligations to the Subcontractor arising after assumption or assignment. Should the District so elect, the Contractor shall execute and deliver all documents and take all steps, including the legal assignment of its contractual rights, as the District may require, for the purpose of fully vesting in the District the rights and benefits of its Subcontractor under Subcontracts or other obligations or commitments. All payments due the Contractor hereunder shall be subject to a right of offset by the District for expenses and damages suffered by the District as a result of any default, acts, or omissions of the Contractor. Contractor must include this assignment provision in all of its contracts with its Subcontractors.

24.1.3.6 The foregoing provisions are in addition to and not in limitation of any other rights or remedies available to District.

24.1.4 Emergency Termination of Public Contracts Act of 1949

24.1.4.1 This Contract is subject to termination as provided by sections 4410 and 4411 of the Government Code of the State of California, being a portion of the Emergency Termination of Public Contracts Act of 1949.

24.1.4.1.1 Section 4410 of the Government Code states:

In the event a national emergency occurs, and public work, being performed by contract, is stopped, directly or indirectly, because of the freezing or diversion of materials, equipment or labor, as the result of an order or a proclamation of the President of the United States, or of an order of any federal authority, and the circumstances or conditions are such that it is impracticable within a reasonable time to proceed with a substantial portion of the work, then the public agency and the contractor may, by written agreement, terminate said contract.

24.1.4.1.2 Section 4411 of the Government Code states:

Such an agreement shall include the terms and conditions of the termination of the contract and provision for the payment of compensation or money, if any, which either party shall pay to the other or any other person, under the facts and circumstances in the case.

24.1.4.2 Compensation to the Contractor shall be determined at the sole discretion of District on the basis of the reasonable value of the Work done, including preparatory work. As an exception to the foregoing and at the District's discretion, in the case of any fully completed separate item or portion of the Work for which there is a separate previously submitted unit price or item on the accepted schedule of values, that price shall control. The District, at its sole discretion, may adopt the Contract Price as the reasonable value of the work done or any portion thereof.

24.2 Termination of Contractor for Convenience

24.2.1 District in its sole discretion may terminate the Contract upon three (3) days' written notice to the Contractor. Under a termination for convenience, the District retains the right to all the options available to the District if there is a termination for cause. In case of a termination for convenience, the Contractor shall have no claims against the District except:

24.2.1.1 The actual cost for labor, materials, and services performed that is unpaid and adequately documented through timesheets, invoices, receipts, or otherwise, and

24.2.1.2 Five percent (5%) of the total cost of work performed as of the date of termination, or five percent (5%) of the value of the Work yet to be performed, whichever is less. This five percent (5%) amount shall be full compensation for all Contractor's and Subcontractor(s)' mobilization and/or demobilization costs and any anticipated loss profits resulting from termination of the Contractor for convenience.

24.3 □ Suspension of Work

24.3.1 □ District in its sole discretion may suspend, delay or interrupt the Work in whole or in part for such period of time as the District may determine upon three (3) days written notice to the Contractor.

24.3.1.1 □ An adjustment may be made for changes in the cost of performance of the Work caused by any such suspension, delay or interruption. No adjustment shall be made to the extent:

24.3.1.1.1 □ That performance is, was or would have been so suspended, delayed or interrupted by another cause for which Contractor is responsible; or

24.3.1.1.2 □ That an equitable adjustment is made or denied under another provision of the Contract; or

24.3.1.1.3 □ That the suspension of Work was the direct or indirect result of Contractor's failure to perform any of its obligations hereunder.

24.3.1.2 □ Any adjustments in cost of performance may have a fixed or percentage fee as provided in the section on Format for Proposed Change Order herein. This amount shall be full compensation for all Contractor's and its Subcontractor(s)' changes in the cost of performance of the Contract caused by any such suspension, delay or interruption.

25. □ CLAIMS PROCESS

25.1 □ Performance during Claim Process

Contractor and its subcontractors shall continue to perform its Work under the Contract and shall not cause a delay of the Work during any dispute, claim, negotiation, mediation, or arbitration proceeding, except by written agreement by the District.

25.2 □ Definition of Claim

25.2.1 □ Pursuant to Public Contract Code section 9204, the term "Claim" means a separate demand by the Contractor sent by registered mail or certified mail with return receipt requested, for one or more of the following:

25.2.1.1 □ A time extension, including without limitation, for relief of damages or penalties for delay assessed by the District under the Contract;

25.2.1.2 □ Payment by the District 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 to which Contractor is not otherwise entitled to; or

25.2.1.3 □ An amount of payment disputed by the District.

25.3 **Claims Presentation**

25.3.1 If Contractor intends to apply for an increase in the Contract Price or Contract Time for any reason including, without limitation, the acts of District or its agents, Contractor shall, within thirty (30) days after the event giving rise to the Claim, give notice of the Claim in writing, including an itemized statement of the details and amounts of its Claim for any increase in the Contract Price of Contract Time, including a Schedule Analysis and any and all other documentation substantiating Contractor's claimed damages. Otherwise, Contractor shall have waived and relinquished its dispute against the District and Contractor's claims for compensation or an extension of time shall be forfeited and invalidated. Likewise, failure to timely submit a claim and the requisite supporting documentation shall constitute a waiver of such claim.

25.3.2 The Claim shall identify:

25.3.2.1 The issues, events, conditions, circumstances and/or causes giving rise to the dispute, and shall show, in detail, the cause and effect of same;

25.3.2.2 The pertinent dates and/or durations and actual and/or anticipated effects on the Contract Price, Contract Schedule milestones and/or Contract Time adjustments;

25.3.2.3 The line-item costs for labor, material, and/or equipment, if applicable; or

25.3.2.4 A request by Contractor, if any, to waive the claims procedure under Public Contract Code section 9204 and proceed directly to the commencement of a civil action or binding arbitration.

25.3.3 The Claim shall include the following certification by the Contractor:

25.3.3.1 The undersigned Contractor certifies under penalty of perjury that the attached dispute is made in good faith; that the supporting data is accurate and complete to the best of my knowledge and belief; that the amount requested accurately reflects the adjustment for which Contractor believes the District is liable; and that I am duly authorized to certify the dispute on behalf of the Contractor.

25.3.3.2 Furthermore, Contractor understands that the value of the attached dispute expressly includes any and all of the Contractor's costs and expenses, direct and indirect, resulting from the Work performed on the Project, additional time required on the Project and/or resulting from delay to the Project. Contractor may not separately recover for overhead or other indirect costs. Any costs, expenses, damages, or time extensions not included are deemed waived.

25.4 □ Claim Resolution pursuant to Public Contract Code section 9204

25.4.1 □ STEP 1:

25.4.1.1 □ Upon receipt of a Claim by registered or certified mail, return receipt requested, including the documents necessary to substantiate it, the District shall conduct a reasonable review of the Claim and, within a period **not to exceed 45 days**, shall provide the Contractor a written statement identifying what portion of the Claim is disputed and what portion is undisputed. Upon receipt of a Claim, the District and Contractor may, **by mutual agreement, extend the time period** to provide a written statement. If the District needs approval from its governing body to provide the Contractor a written statement identifying the disputed portion and the undisputed portion of the Claim, and the governing body does not meet within the 45 days or within the mutually agreed to extension of time following receipt of Claim sent by registered mail or certified mail, return receipt requested, the District shall have **up to three (3) days following the next duly publicly noticed meeting of the governing body after the 45-day period, or extension**, expires to provide Contractor a written statement identifying the disputed portion and the undisputed portion.

25.4.1.1.1 □ Any payment due on an undisputed portion of the Claim shall be processed and made within 60 days after the District issues its written statement. Amounts not paid in a timely manner as required by this section, section 25.4, shall bear interest at seven percent (7%) per annum.

25.4.1.2 □ Upon receipt of a Claim, the parties may mutually agree to waive, in writing, mediation and proceed directly to the commencement of a civil action or binding arbitration, as applicable. In this instance, District and Contractor must comply with the sections below regarding Public Contract Code section 20104 et seq. and Government Code Claim Act Claims.

25.4.1.3 □ If the District fails to issue a written statement, or to otherwise meet the time requirements of this section, this shall result in the Claim being deemed rejected in its entirety. A Claim that is denied by reason of the District's failure to have responded to a Claim, or its failure to otherwise meet the time requirements of this section, shall not constitute an adverse finding with regard to the merits of the Claim or the responsibility or qualifications of Contractor.

25.4.2 □ STEP 2:

25.4.2.1 □ If Contractor disputes the District's written response, or if the District fails to respond to a Claim within the time prescribed, Contractor may demand in writing an informal conference to meet and confer for settlement of the issues in dispute. Upon receipt of a demand in writing sent by registered mail or certified mail, return receipt requested, the District shall schedule a meet and confer conference within 30 days for settlement of the dispute. Within 10 business days following the conclusion of the meet and confer conference, if the Claim or any portion of the Claim remains in dispute, the District shall provide the Contractor a written statement identifying the portion of the Claim that remains in dispute and the portion that is undisputed.

25.4.2.1.1.1 □ Any payment due on an undisputed portion of the Claim shall be processed and made within 60 days after the District issues its

written statement. Amounts not paid in a timely manner as required by this section, section 25.4, shall bear interest at seven percent (7%) per annum.

25.4.3 □ STEP 3:

25.4.3.1 □ Any disputed portion of the Claim, as identified by Contractor in writing, shall be submitted to nonbinding mediation, with the District and Contractor sharing the associated costs equally. The District and Contractor shall mutually agree to a mediator within 10 business days after the disputed portion of the Claim has been identified in writing. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the Claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator. If mediation is unsuccessful, the parts of the Claim remaining in dispute shall be subject to applicable procedures outside this section.

25.4.3.1.1 □ For purposes of this section, mediation includes any nonbinding process, including, but not limited to, neutral evaluation or a dispute review board, in which an independent third party or board assists the parties in dispute resolution through negotiation or by issuance of an evaluation. Any mediation utilized shall conform to the timeframes in this section.

25.4.3.2 □ Unless otherwise agreed to by the District and Contractor in writing, the mediation conducted pursuant to this section shall excuse any further obligation under Public Contract Code section 20104.4 to mediate after litigation has been commenced.

25.4.4 □ STEP 4:

25.4.4.1 □ If mediation under this section does not resolve the parties' dispute, the District may, but does not require arbitration of disputes under private arbitration or the Public Works Contract Arbitration Program.

25.5 □ Subcontractor Pass-Through Claims

25.5.1 □ If a subcontractor or a lower tier subcontractor lacks legal standing to assert a claim against a District because privity of contract does not exist, the contractor may present to the District a Claim on behalf of a subcontractor or lower tier subcontractor. A subcontractor may request in writing, either on his or her own behalf or on behalf of a lower tier subcontractor, that Contractor present a Claim for work which was performed by the subcontractor or by a lower tier subcontractor on behalf of the subcontractor. The subcontractor requesting that the Claim be presented to the District shall furnish reasonable documentation to support the Claim.

25.5.2 □ Within 45 days of receipt of this written request from a subcontractor, Contractor shall notify the subcontractor in writing as to whether the Contractor presented the Claim to the District and, if Contractor did not present the Claim, provide the subcontractor with a statement of the reasons for not having done so.

25.5.3 □ The Contractor shall bind all its Subcontractors to the provisions of this section and will hold the District harmless against Claims by Subcontractors.

25.6 □ **Government Code Claim Act Claim**

25.6.1 □ If a claim, or any portion thereof, remains in dispute upon satisfaction of all applicable Claim Resolution requirements, including those pursuant to Public Contract Code section 9204, the Contractor shall comply with all claims presentation requirements as provided in Chapter 1 (commencing with section 900) and Chapter 2 (commencing with section 910) of Part 3 of Division 3.6 of Title 1 of Government Code as a condition precedent to the Contractor's right to bring a civil action against the District. For purposes of those provisions, the running of the time within which a claim must be presented to the District shall be tolled from the time Contractor submits its written Claim until the time the Claim is denied, including any time utilized by any applicable meet and confer process.

25.7 □ **Claim Resolution pursuant to Public Contract Code section 20104 et seq.**

25.7.1 □ In the event of a disagreement between the parties as to performance of the Work, the interpretation of this Contract, or payment or nonpayment for Work performed or not performed, the parties shall attempt to resolve all claims of three hundred seventy-five thousand dollars (\$375,000) or less which arise between Contractor and District by those procedures set forth in Public Contract Code section 20104, et seq., to the extent applicable.

25.7.1.1 □ Contractor shall file with the District any written Claim, including the documents necessary to substantiate it, upon the application for final payment.

25.7.1.2 □ For claims of less than fifty thousand dollars (\$50,000), the District shall respond in writing within forty-five (45) days of receipt of the Claim or may request in writing within thirty (30) days of receipt of the Claim any additional documentation supporting the Claim or relating to defenses or claims the District may have against the Contractor.

25.7.1.2.1 □ If additional information is required, it shall be requested and provided by mutual agreement of the parties.

25.7.1.2.2 □ District's written response to the documented Claim shall be submitted to the Contractor within fifteen (15) days after receipt of the further documentation or within a period of time no greater than that taken by the Contractor to produce the additional information, whichever is greater.

25.7.1.3 □ For claims of over fifty thousand dollars (\$50,000) and less than or equal to three hundred seventy-five thousand dollars (\$375,000), the District shall respond in writing to all written Claims within sixty (60) days of receipt of the claim, or may request, in writing, within thirty (30) days of receipt of the Claim any additional documentation supporting the Claim or relating to defenses or claims the District may have against the Contractor.

25.7.1.3.1 □ If additional information is required, it shall be requested and provided upon mutual agreement of the District and the Contractor.

25.7.1.3.2 The District's written response to the Claim, as further documented, shall be submitted to the Contractor within thirty (30) days after receipt of the further documentation, or within a period of time no greater than that taken by the Contractor to produce the additional information or requested documentation, whichever is greater.

25.7.1.4 If Contractor disputes the District's written response, or the District fails to respond within the time prescribed, Contractor may so notify the District, in writing, either within fifteen (15) days of receipt of the District's response or within fifteen (15) days of the District's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon a demand, the District shall schedule a meet and confer conference within thirty (30) days for settlement of the dispute.

25.7.1.5 Following the meet and confer conference, if the Claim or any portion of it remains in dispute, the Contractor may file a claim as provided in Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions the running of the time within which a claim must be filed shall be tolled from the time the Contractor submits its written Claim until the time the Claim is denied, including any period of time utilized by the meet and confer process.

25.7.1.6 For any civil action filed to resolve claims filed pursuant to this section, within sixty (60) days, but no earlier than thirty (30) days, following the filing of responsive pleadings, the court shall submit the matter to nonbinding mediation unless waived by mutual stipulation of both parties. The mediation process shall provide for the selection within fifteen (15) days by both parties of a disinterested third person as mediator, shall be commenced within thirty (30) days of the submittal, and shall be concluded within fifteen (15) days from the commencement of the mediation unless a time requirement is extended upon a good cause showing to the court or by stipulation of both parties. If the parties fail to select a mediator within the 15-day period, any party may petition the court to appoint the mediator.

25.7.1.7 If the matter remains in dispute, the case shall be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with Section 1141.10) of the Title 3 of Part 3 of the Code of Civil Procedure, notwithstanding Section 1141.11 of that code. The Civil Discovery Act of 1986, (Article 3 (commencing with Section 2016) of Chapter 3 of Title 3 of part 4 of the Code of Civil Procedure) shall apply to any proceeding brought under this subdivision consistent with the rules pertaining to judicial arbitration.

25.7.1.8 The District shall not fail to pay money as to any portion of a Claim which is undisputed except as otherwise provided in the Contract Documents. In any suit filed pursuant to this section, the District shall pay interest due at the legal rate on any arbitration award or judgment. Interest shall begin to accrue on the date the suit is filed in a court of law.

25.7.2 Contractor shall bind its Subcontractors to the provisions of this Section and will hold the District harmless against disputes by Subcontractors.

25.8□ Claim Resolution Non-Applicability

25.8.1□ The procedures for dispute and claim resolutions set forth in this Article shall not apply to the following:

25.8.1.1□ Personal injury, wrongful death or property damage claims;

25.8.1.2□ Latent defect or breach of warranty or guarantee to repair;

25.8.1.3□ Stop payment notices;

25.8.1.4□ District's rights set forth in the Article on Suspension and Termination;

25.8.1.5□ Disputes arising out of labor compliance enforcement by the Department of Industrial Relations; or

25.8.1.6□ District rights and obligations as a public entity set forth in applicable statutes; provided, however, that penalties imposed against a public entity by statutes, including, but not limited to, Public Contract Code sections 20104.50 and 7107, shall be subject to the Claim Resolution requirements provided in this Article.

25.9□ Attorney's Fees

25.9.1□ Should litigation be necessary to enforce any terms or provisions of this Agreement, then each party shall bear its own litigation and collection expenses, witness fees, court costs and attorney's fees.

26.□ STATE LABOR, WAGE & HOUR, APPRENTICE, AND RELATED PROVISIONS

26.1□ Labor Compliance and Enforcement

Since this Project is subject to labor compliance and enforcement by the Department of Industrial Relations ("DIR"), Contractor specifically acknowledges and understands that it shall perform the Work of this Agreement while complying with all the applicable provisions of Division 2, Part 7, Chapter 1, of the Labor Code and Title 8 of the California Code of Regulations, including, without limitation, the requirement that the Contractor and all Subcontractors shall timely furnish complete and accurate electronic certified payroll records directly to the DIR. The District may not issue payment if this requirement is not met.

26.2□ Wage Rates, Travel, and Subsistence

26.2.1□ Pursuant to the provisions of Article 2 (commencing at section 1770), Chapter 1, Part 7, Division 2, of the Labor Code, 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 work is to be performed for each craft, classification, or type of worker needed to execute this Contract are on file at the District's principal office and copies will be made available to any interested party on request. Contractor shall obtain and post a copy of these wage rates at the job site.

26.2.2□ Holiday and overtime work, when permitted by law, shall be paid for at the general prevailing rate of per diem wages for holiday and overtime work on file

with the Director of the Department of Industrial Relations, unless otherwise specified. The holidays upon which those rates shall be paid need not be specified by the District, but shall be all holidays recognized in the applicable collective bargaining agreement. If the prevailing rate is not based on a collectively bargained rate, the holidays upon which the prevailing rate shall be paid shall be as provided in Section 6700 of the Government Code.

26.2.3 □ Contractor shall pay and shall cause to be paid each worker engaged in Work on the Project the general prevailing rate of per diem wages determined by the Director of the Department of Industrial Relations, regardless of any contractual relationship which may be alleged to exist between Contractor or any Subcontractor and such workers.

26.2.4 □ If during the period this bid is required to remain open, the Director of the Department of Industrial Relations determines that there has been a change in any prevailing rate of per diem wages in the locality in which the Work under the Contract is to be performed, such change shall not alter the wage rates in the Notice to Bidders or the Contract subsequently awarded.

26.2.5 □ Pursuant to Labor Code section 1775, Contractor shall, as a penalty to District, forfeit the statutory amount (believed by the District to be currently up to two hundred dollars (\$200) for each calendar day, or portion thereof, for each worker paid less than the prevailing rates, determined by the District and/or the Director, for the work or craft in which that worker is employed for any public work done under Contract by Contractor or by any Subcontractor under it. The difference between such prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the prevailing wage rate shall be paid to each worker by Contractor.

26.2.6 □ Any worker employed to perform Work on the Project, which Work is not covered by any classification listed in the general prevailing wage rate of per diem wages determined by the Director, shall be paid not less than the minimum rate of wages specified therein for the classification which most nearly corresponds to Work to be performed by him, and such minimum wage rate shall be retroactive to time of initial employment of such person in such classification.

26.2.7 □ Pursuant to Labor Code section 1773.1, per diem wages are deemed to include employer payments for health and welfare, pension, vacation, travel time, subsistence pay, and apprenticeship or other training programs authorized by Labor Code section 3093, and similar purposes.

26.2.8 □ Contractor shall post at appropriate conspicuous points on the Site of Project, a schedule showing all determined minimum wage rates and all authorized deductions, if any, from unpaid wages actually earned. In addition, Contractor shall post a sign-in log for all workers and visitors to the Site, a list of all subcontractors of any tier on the Site, and the required Equal Employment Opportunity poster(s).

26.3 □ **Hours of Work**

26.3.1 □ As provided in article 3 (commencing at section 1810), chapter 1, part 7, division 2, of the Labor Code, eight (8) hours of labor shall constitute a legal day's work. The time of service of any worker employed at any time by Contractor or by any Subcontractor on any subcontract under this Contract upon the Work or upon

any part of the Work contemplated by this Contract shall be limited and restricted by Contractor to eight (8) hours per day, and forty (40) hours during any one week, except as hereinafter provided. Notwithstanding the provisions hereinabove set forth, Work performed by employees of Contractor in excess of eight (8) hours per day and forty (40) hours during any one week, shall be permitted upon this public work upon compensation for all hours worked in excess of eight (8) hours per day at not less than one and one-half times the basic rate of pay.

26.3.2 Contractor shall keep and shall cause each Subcontractor to keep an accurate record showing the name of and actual hours worked each calendar day and each calendar week by each worker employed by Contractor in connection with the Work or any part of the Work contemplated by this Contract. The record shall be kept open at all reasonable hours to the inspection of District and to the Division of Labor Standards Enforcement of the DIR.

26.3.3 Pursuant to Labor Code section 1813, Contractor shall as a penalty to the District forfeit the statutory amount (believed by the District to be currently twenty-five dollars (\$25)) for each worker employed in the execution of this Contract by Contractor or by any Subcontractor for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any one calendar day and forty (40) hours in any one calendar week in violation of the provisions of article 3 (commencing at section 1810), chapter 1, part 7, division 2, of the Labor Code.

26.3.4 Any Work necessary to be performed after regular working hours, or on Sundays or other holidays shall be performed without additional expense to the District.

26.4 **Payroll Records**

26.4.1 Contractor shall upload, and shall cause each Subcontractor performing any portion of the Work under this Contract to upload, an accurate and complete certified payroll record ("CPR") electronically using DIR's eCPR System by uploading the CPRs by electronic XML file or entering each record manually using the DIR's iform (or current form) online on a weekly basis and within ten (10) days of any request by the District or Labor Commissioner at <http://www.dir.ca.gov/Public-Works/Certified-Payroll-Reporting.html> or current application and URL, showing the name, address, social security number, work classification, 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 the Contractor and/or each Subcontractor in connection with the Work.

26.4.1.1 The CPRs enumerated hereunder shall be filed directly with the DIR on a weekly basis or to the requesting party, whether the District or DIR, within ten (10) days after receipt of each written request. The CPRs from the Contractor and each Subcontractor for each week shall be provided on or before Wednesday of the week following the week covered by the CPRs. District may not make any payment to Contractor until:

26.4.1.1.1 Contractor and/or its Subcontractor(s) provide CPRs acceptable to the DIR; and

26.4.1.1.2 Any delay in Contractor and/or its Subcontractor(s) providing CPRs to the DIR in a timely manner may directly delay Contractor's payment.

26.4.2 □ All CPRs shall be available for inspection at all reasonable hours at the principal office of Contractor on the following basis:

26.4.2.1 □ A certified copy of an employee's CPR shall be made available for inspection or furnished to the employee or his/her authorized representative on request.

26.4.2.2 □ CPRs shall be made available for inspection or furnished upon request to a representative of District, Division of Labor Standards Enforcement, Division of Apprenticeship Standards, and/or the DIR.

26.4.2.3 □ CPRs shall be made available upon request by the public for inspection or copies thereof made; provided, however, that a request by the public shall be made through the District, Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. If the requested CPRs have not been provided pursuant to the provisions herein, the requesting party shall, prior to being provided the records, reimburse the costs of preparation by Contractor, Subcontractors, and the entity through which the request was made. The public shall not be given access to the records at the principal office of Contractor.

26.4.3 □ Any copy of records made available for inspection as copies and furnished upon request to the public or any public agency by District, Division of Apprenticeship Standards, or Division of Labor Standards Enforcement shall be marked or obliterated in such a manner as to prevent disclosure of an individual's name, address, and social security number. The name and address of Contractor awarded Contract or performing Contract shall not be marked or obliterated.

26.4.4 □ Contractor shall inform District of the location of the records enumerated hereunder, including the street address, city, and county, and shall, within five (5) working days, provide a notice of change of location and address.

26.4.5 □ In the event of noncompliance with the requirements of this section, Contractor shall have ten (10) days in which to comply subsequent to receipt of written notice specifying in what respects Contractor must comply with this section. Should noncompliance still be evident after the ten (10) day period, Contractor shall, as a penalty to District, forfeit up to one hundred dollars (\$100) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Labor Commissioner, these penalties shall be withheld from progress payments then due.

26.4.6 □ **[RESERVED]**

26.5 □ **[RESERVED]**

26.6 □ **Apprentices**

26.6.1 □ Contractor acknowledges and agrees that, if this Contract involves a dollar amount greater than or a number of working days greater than that specified in Labor Code section 1777.5, then this Contract is governed by the provisions of Labor Code Section 1777.5. It shall be the responsibility of Contractor to ensure compliance with this Article and with Labor Code section 1777.5 for all apprenticeship occupations.

26.6.2 □ Apprentices of any crafts or trades may be employed and, when required by Labor Code section 1777.5, shall be employed provided they are properly registered in full compliance with the provisions of the Labor Code.

26.6.3 □ Every such apprentice shall be paid the standard wage paid to apprentices under the regulations of the craft or trade at which he/she is employed, and shall be employed only at the work of the craft or trade to which she/he is registered.

26.6.4 □ Only apprentices, as defined in section 3077 of the Labor Code, who are in training under apprenticeship standards and written apprentice agreements under chapter 4 (commencing at section 3070), division 3, of the Labor Code, are eligible to be employed. The employment and training of each apprentice shall be in accordance with the provisions of the apprenticeship standards and apprentice agreements under which he/she is training.

26.6.5 □ Pursuant to Labor Code section 1777.5, if that section applies to this Contract as indicated above, Contractor and any Subcontractors employing workers in any apprenticeable craft or trade in performing any Work under this Contract shall apply to the applicable joint apprenticeship committee for a certificate approving the Contractor or Subcontractor under the applicable apprenticeship standards and fixing the ratio of apprentices to journeymen employed in performing the Work.

26.6.6 □ Pursuant to Labor Code section 1777.5, if that section applies to this Contract as indicated above, Contractor and any Subcontractor may be required to make contributions to the apprenticeship program.

26.6.7 □ If Contractor or Subcontractor willfully fails to comply with Labor Code section 1777.5, then, upon a determination of noncompliance by the Administrator of Apprenticeship, it shall:

26.6.7.1 □ Be denied the right to bid on any subsequent project for one (1) year from the date of such determination;

26.6.7.2 □ Forfeit as a penalty to District the full amount as stated in Labor Code section 1777.7. Interpretation and enforcement of these provisions shall be in accordance with the rules and procedures of the California Apprenticeship Council and under the authority of the Chief of the Division of Apprenticeship Standards.

26.6.8 □ Contractor and all Subcontractors shall comply with Labor Code section 1777.6, which section forbids certain discriminatory practices in the employment of apprentices.

26.6.9 □ Contractor shall become fully acquainted with the law regarding apprentices prior to commencement of the Work. Special attention is directed to sections 1777.5, 1777.6, and 1777.7 of the Labor Code, and title 8, California Code of Regulations, section 200 et seq. Questions may be directed to the State Division of Apprenticeship Standards, 455 Golden Gate Avenue, 9th floor, San Francisco, California 94102.

26.7 □ **Non-Discrimination**

26.7.1 □ Contractor herein agrees to comply with the provisions of the California Fair Employment and Housing Act as set forth in part 2.8 of division 3 of the

California Government Code, commencing at section 12900; the Federal Civil Rights Act of 1964, as set forth in Public Law 88-352, and all amendments thereto; Executive Order 11246; and all administrative rules and regulations found to be applicable to Contractor and Subcontractor.

26.7.2 □ Special requirements for Federally Assisted Construction Contracts: During the performance of this Contract, Contractor agrees to incorporate in all subcontracts the provisions set forth in Chapter 60-1.4(b) of Title 41 published in Volume 33 No. 104 of the Federal Register dated May 28, 1968.

26.8 □ **Labor First Aid**

Contractor shall maintain emergency first aid treatment for Contractor's workers on the Project which complies with the Federal Occupational Safety and Health Act of 1970 (29 U.S.C. § 651 et seq.) and the California Occupational Safety and Health Act of 1973 (Lab. Code, § 6300 et seq.; 8 Cal. Code of Regs., § 330 et seq.).

27. □ **[RESERVED]**

28. □ **MISCELLANEOUS**

28.1 □ **Assignment of Antitrust Actions**

28.1.1 □ Section 7103.5(b) of the Public Contract Code states:

In entering into a public works contract or subcontract to supply goods, services, or materials pursuant to a public works contract, the Contractor or subcontractor offers and agrees to assign to the awarding body 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. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, which assignment shall be made and become effective at the time the awarding body tenders final payment to the Contractor, without further acknowledgment by the parties.

28.1.2 □ Section 4552 of the Government Code states:

In submitting a bid to a public purchasing body, the bidder offers and agrees that if the bid is accepted, it will assign to the purchasing body 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. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, materials, or services by the bidder for sale to the purchasing body pursuant to the bid. Such assignment shall be made and become effective at the time the purchasing body tenders final payment to the bidder.

28.1.3 □ Section 4553 of the Government Code states:

If an awarding body or public purchasing body receives, either through judgment or settlement, a monetary recovery for a cause of action assigned under this chapter, the assignor shall be entitled to receive reimbursement for actual legal costs incurred and may, upon demand, recover from the public body any portion of the recovery, including treble damages, attributable to overcharges that were paid by the assignor

but were not paid by the public body as part of the bid price, less the expenses incurred in obtaining that portion of the recovery.

28.1.4 □ Section 4554 of the Government Code states:

Upon demand in writing by the assignor, the assignee shall, within one year from such demand, reassign the cause of action assigned under this part if the assignor has been or may have been injured by the violation of law for which the cause of action arose and (a) the assignee has not been injured thereby, or (b) the assignee declines to file a court action for the cause of action.

28.1.5 □ Under this Article, "public purchasing body" is District and "bidder" is Contractor.

28.2 □ **Excise Taxes**

If, under Federal Excise Tax Law, any transaction hereunder constitutes a sale on which a Federal Excise Tax is imposed and the sale is exempt from such Federal Excise Tax because it is a sale to a State or Local Government for its exclusive use, District, upon request, will execute documents necessary to show (1) that District is a political subdivision of the State for the purposes of such exemption, and (2) that the sale is for the exclusive use of District. No Federal Excise Tax for such materials shall be included in any Contract Price.

28.3 □ **Taxes**

Contract Price is to include any and all applicable sales taxes or other taxes that may be due in accordance with section 7051 et seq. of the Revenue and Taxation Code, Regulation 1521 of the State Board of Equalization or any other tax code that may be applicable.

28.4 □ **Shipments**

All shipments must be F.O.B. destination to Site or sites, as indicated in the Contract Documents. There must be no charge for containers, packing, unpacking, drayage, or insurance. The total Contract Price shall be all inclusive (including sales tax) and no additional costs of any type will be considered.

28.5 □ **Compliance with Government Reporting Requirements**

If this Contract is subject to federal or other governmental reporting requirements because of federal or other governmental financing in whole or in part for the Project of which it is part, or for any other reason, Contactor shall comply with those reporting requirements at the request of the District at no additional cost.

END OF DOCUMENT

SPECIAL CONDITIONS

THIS DOCUMENT MUST BE ADAPTED FOR EACH PROJECT – Delete any provision that is not applicable or if no change from the provision in the General Conditions.

1. Mitigation Measures
2. Modernization Projects
3. Badge Policy for Contractors
4. Substitution for Specified Items
5. Weather Days
6. Owner-Controlled or Wrap-Up Insurance Program
7. Insurance Policy Limits
8. Permits, Certificates, Licenses, Fees, Approval
9. Project Labor Agreement/Payroll Records
10. As-Builts and Record Drawings
11. Fingerprinting
12. Disabled Veteran Business Enterprises
13. Construction Manager
14. Program Manager
15. Federal Funds
16. Preliminary Schedule of Values

SPECIAL CONDITIONS

1. Mitigation Measures

~~Contractor shall comply with all applicable mitigation measures, if any, adopted by any public agency with respect to this Project pursuant to the California Environmental Quality Act. (Public Resources Code section 21000 et seq.)~~

2. Modernization Projects

2.1 Access. Access to the school buildings and entry to buildings, classrooms, restrooms, mechanical rooms, electrical rooms, or other rooms, for construction purposes, must be coordinated with District and onsite District personnel before Work is to start. Unless agreed to otherwise in writing, only a school custodian will be allowed to unlock and lock doors in existing building(s). The custodian will be available only while school is in session. If a custodian is required to arrive before 7:00 a.m. or leave after 3:30 p.m. to accommodate Contractor's Work, the overtime wages for the custodian will be paid by the Contractor, unless at the discretion of the District, other arrangements are made in advance.

2.2 Keys. Upon request, the District may, at its own discretion, provide keys to the school site for the convenience of the Contractor. The Contractor agrees to pay all expenses to re-key the entire school site and all other affected District buildings if the keys are lost or stolen, or if any unauthorized party obtains a copy of the key or access to the school.

2.3 Maintaining Services. The Contractor is advised that Work is to be performed in spaces regularly scheduled for instruction. Interruption and/or periods of shutdown of public access, electrical service, water service, lighting, or other utilities shall be only as arranged in advance with the District. Contractor shall provide temporary services to all facilities interrupted by Contractor's Work.

2.4 Maintaining Utilities. The Contractor shall maintain in operation during duration of Contract, drainage lines, storm drains, sewers, water, gas, electrical, steam, and other utility service lines within working area.

2.5 Confidentiality. Contractor shall maintain the confidentiality of all information, documents, programs, procedures and all other items that Contractor encounters while performing the Work. This requirement shall be ongoing and shall survive the expiration or termination of this Contract and specifically includes, without limitation, all student, parent, and employee disciplinary information and health information.

2.6 Work during Instructional Time. By submitting its bid, Contractor affirms that Work may be performed during ongoing instruction in existing facilities. If so, Contractor agrees to cooperate to the best of its ability to minimize any disruption to

school operations and any use of school facilities by the public up to, and including, rescheduling specific work activities, at no additional cost to District.

2.7 **No Work during Student Testing.** Contractor shall, at no additional cost to the District and at the District's request, coordinate its Work to not disturb District students including, without limitation, not performing any Work when students at the Site are taking State or Federally-required tests.

3. Badge Policy for Contractors

All Contractors doing work for the District will provide their workers with identification badges. These badges will be worn by all members of the Contractor's staff who are working in a District facility.

3.1 Badges must be filled out in full and contain the following information:

3.1.1 Name of Contractor

3.1.2 Name of Employee

3.1.3 Contractor's address and phone number

3.2 Badges are to be worn when the Contractor or his/her employees are on site and must be visible at all times. Contractors must inform their employees that they are required to allow District employees, the Architect, the Construction Manager, the Program Manager, or the Project Inspector to review the information on the badges upon request.

3.3 Continued failure to display identification badges as required by this policy may result in the individual being removed from the Project or assessment of fines against the Contractor.

4. Substitution for Specified Items

4.1 Whenever in the Specifications any materials, process, or article is indicated or specified by grade, patent, or proprietary name, or by name of manufacturer, that Specification shall be deemed to be followed by the words "or equal." Contractor may, unless otherwise stated, offer any material, process, or article that shall be substantially equal or better in every respect to that so indicated or specified.

4.1.1 If the material, process, or article offered by Contractor is not, in the opinion of the District, substantially equal or better in every respect to that specified, then Contractor shall furnish the material, process, or article specified in the Specifications without any additional compensation or change order.

4.1.2 This provision shall not be applicable with respect to any material, product, thing or service for which District made findings and gave notice in accordance with Public Contract Code section 3400(c); therefore, Contractor shall not be entitled to request a substitution with respect to those materials, products or services.

4.2 A request for a substitution shall be submitted as follows:

4.2.1 Contractor shall notify the District in writing of any request for a substitution at least ten (10) days prior to bid opening as indicated in the Instructions to Bidders.

4.3 Within 35 days after the date of the Notice of Award, Contractor shall provide data substantiating a request for substitution of "an equal" item, including but not limited to the following:

4.3.1 All variations of the proposed substitute from the material specified including, but not limited to, principles of operation, materials, or construction finish, thickness or gauge of materials, dimensions, weight, and tolerances;

4.3.2 Available maintenance, repair or replacement services;

4.3.3 Increases or decreases in operating, maintenance, repair, replacement, and spare parts costs;

4.3.4 Whether or not acceptance of the substitute will require other changes in the Work (or in work performed by the District or others under Contract with the District); and

4.3.5 The time impact on any part of the Work resulting directly or indirectly from acceptance of the proposed substitute.

4.4 No substitutions shall be made until approved, in writing, by the District. The burden of proof as to equality of any material, process, or article shall rest with Contractor. The Contractor warrants that if substitutes are approved:

4.4.1 The proposed substitute is equal or superior in all respects to that specified, and that such proposed substitute is suitable and fit for the intended purpose and will perform adequately the function and achieve the results called for by the general design and the Contract Documents;

4.4.2 The Contractor provides the same warranties and guarantees for the substitute that would be provided for that specified;

4.4.3 The Contractor shall be fully responsible for the installation of the substitute and any changes in the Work required, either directly or indirectly, because of the acceptance of such substitute, with no increase in Contract Price or Contract Time. Incidental changes or extra component parts required to accommodate the substitute will be made by the Contractor without a change in the Contract Price or Contract Time;

4.4.4 The Contractor shall be responsible for any re-design costs occasioned by District's acceptance and/or approval of any substitute; and

4.4.5 The Contractor shall, in the event that a substitute is less costly than that specified, credit the District with one hundred percent (100%) of the net difference between the substitute and the originally specified material. In this event, the Contractor agrees to execute a deductive Change Order to reflect that credit.

4.5 In the event Contractor furnishes a material, process, or article more expensive than that specified, the difference in the cost of that material, process, or article so furnished shall be borne by Contractor.

4.6 In no event shall the District be liable for any increase in Contract Price or Contract Time due to any claimed delay in the evaluation of any proposed substitute or in the acceptance or rejection of any proposed substitute.

4.7 Contractor shall be responsible for any costs the District incurs for professional services, DSA fees, or delay to the Project Schedule, if applicable, while DSA reviews changes for the convenience of Contractor and/or to accommodate Contractor's means and methods. District may deduct those costs from any amounts owing to the Contractor for the review of the request for substitution, even if the request for substitution is not approved. District, at its sole discretion, shall deduct from the payments due to and/or invoice Contractor for all the professional services and/or DSA fees or delay to the Project Schedule, if applicable, while DSA reviews changes for the convenience of Contractor and/or to accommodate Contractor's means and methods arising herein.

5. Weather Days

Delays due to Adverse Weather conditions will only be permitted in compliance with the provisions in the General Conditions and only if the number of days of Adverse Weather exceeds the following parameters and Contractor can verify that the excess days of Adverse Weather caused delays:

January	<u>2</u>	July	<u>0</u>
February	<u>2</u>	August	<u>0</u>
March	<u>1</u>	September	<u>0</u>
April	<u>1</u>	October	<u>0</u>
May	<u>1</u>	November	<u>1</u>
June	<u>0</u>	December	<u>1</u>

6. Insurance Policy Limits

All of Contractor's insurance shall be with insurance companies with an A.M. Best rating of no less than _____. The limits of insurance shall not be less than:

Commercial General Liability	Product Liability and Completed Operations, Fire Damage Liability – Split Limit	Low Risk: \$1,000,000 per occurrence; \$2,000,000 aggregate
		Intermediate Risk: \$2,000,000 per occurrence; \$4,000,000 aggregate
		High Risk: \$5,000,000 per occurrence; \$10,000,000 aggregate
Automobile Liability – Any Auto	Combined Single Limit	Personal vehicles: \$500,000 Commercial vehicles: \$1,000,000
		Personal vehicles: \$100,000 per person/ \$300,000 per accident]
Workers' Compensation		Statutory limits pursuant to State law
Employers' Liability		[E.G. \$0]
Builder's Risk (Course of Construction)		Issued for the value and scope of Work indicated herein.
Pollution Liability		[E.G. \$0]

7. Permits, Certificates, Licenses, Fees, Approvals

7.1 Payment for Permits, Certificates, Licenses, Fees, and Approvals. As required in the General Conditions, the Contractor shall secure and pay for all permits, licenses, approvals, and certificates necessary for the prosecution of the Work with the exception of the following:

7.1.1 **N/A**

7.1.2 With respect to the above-listed items, Contractor shall be responsible for securing such items; however, District will be responsible for payment of these charges or fees. Contractor shall notify the District of the amount due with respect to such items and to whom the amount is payable. Contractor shall provide the District with an invoice and receipt with respect to such charges or fees.

7.2 General Permit For Storm Water Discharges Associated With Construction and Land Disturbance Activities

7.2.1 Contractor acknowledges that all California school districts are obligated to develop and implement the following requirements for the discharge of storm water to surface waters from its construction and land disturbance activities (storm water requirements), without limitation:

7.2.1.1 Municipal Separate Storm Sewer System (MS4) is a system of conveyances used to collect and/or convey storm water, including, without limitation, catch basins, curbs, gutters, ditches, man-made channels, and storm drains.

7.2.1.2 Storm Water Pollution Prevention Plan ("SWPPP") contains specific best management practices ("BMPs") and establishes numeric effluent limitations at:

7.2.1.2.1 Sites where the District engages in maintenance (e.g., fueling, cleaning, repairing) for transportation activities.

7.2.1.2.2 Construction sites where:

7.2.1.2.2.1 One (1) or more acres of soil will be disturbed, or

7.2.1.2.2.2 The project is part of a larger common plan of development that disturbs more than one (1) acre of soil.

7.2.2 Contractor shall comply with any District storm water requirements that are approved by the District and applicable to the Project, at no additional cost to the District.

7.2.3 At no additional cost to the District, Contractor shall provide a Qualified Storm Water Practitioner who shall be onsite and implement and monitor any and all SWPPP requirements applicable to the Project, including but not limited to:

7.2.3.1 At least forty eight (48) hours prior to a forecasted rain event, implementing the Rain Event Action Plan (REAP) for any rain event requiring implementation of the REAP, including any erosion and sediment control measures needed to protect all exposed portions of the site; and

7.2.3.2 Monitoring any Numeric Action Levels (NALs), if applicable.

8. As-Builts and Record Drawings

8.1 When called for by Division 1, Contractor shall submit As-Built Drawings pursuant to the Contract Documents consisting of one set of computer-aided design and drafting ("CADD") files plus one set of As-Built Drawings.

8.2 Contractor shall submit Record Drawings pursuant to the Contract Documents consisting of one set of computer-aided design and drafting ("CADD") files in the following, plus one set of Record Drawings.

9. Fingerprinting

Contractor shall comply with the provisions of Education Code section 45125.2 regarding the submission of employee fingerprints to the California Department of Justice and the completion of criminal background investigations of its employees, its subcontractor(s), and its subcontractors' employees. Contractor shall not permit any employee to have any contact with District pupils until such time as Contractor has verified in writing to the governing board of the District, that such employee has not been convicted of a violent or serious felony, as defined in Education Code section 45122.1. Contractor shall fully complete and perform all tasks required pursuant to the Criminal Background Investigation/ Fingerprinting Certification.

10. Disabled Veteran Business Enterprises

This Project uses or may plan to use funds allocated pursuant to the State of California School Facility Program ("Program") for the construction and/or modernization of school buildings. Therefore, Section 17076.11 of the Education Code requires the District to have a participation goal for disabled veteran business enterprises ("DVBE") of at least three percent (3%), per year, of the overall dollar amount expended each year by the District on projects that receive state funding. The Contractor must submit the Disabled Veteran Business Enterprise Participation Certification to the District with its executed Agreement, identifying the steps Contractor took to solicit DVBE participation in conjunction with this Contract.

11. Construction Manager

The District will use a Construction Manager on the Project that is the subject of this Contract. Ryan Lancaster is the Construction Manager for this Project.

12. Program Manager

Amberly Kidder is the Program Manager designated for the Project that is the subject of this Contract.

13. Federal Funds

As this Project is funded in whole or in part by federal funds, Contractor and all Subcontractors are subject to civil or criminal prosecution for any violation of the federal False Claims Act set forth under section 1001 of title 18 and section 231 of title 31 of the United States Code.

The following provisions are added as Section 27 of the General Conditions:

27. FEDERAL LABOR, WAGE & HOUR, APPRENTICE, AND RELATED PROVISIONS

27.1 Minimum Wages

The Davis-Bacon Act and 29 CFR parts 1 through 7 shall apply if the Project is financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution.

27.1.1 All laborers and mechanics employed or working upon the Site of the Work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the Project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account, except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3) , the full amount of wages and bona fide fringe benefits, or cash equivalents thereof, due at time of payment computed at rates not less than those contained in the applicable wage determination of the Secretary of Labor regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of this section, including but not limited to paragraph 27.1.7; also, regular contributions made or costs incurred for more than a weekly period, but not less often than quarterly, under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of Work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing Work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, that the employer's payroll records accurately set forth the time spent in each classification in which Work is performed. The wage determination including any additional classification and wage rates conformed under this section, including but not limited to paragraph 27.1.6 and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its Subcontractors at the Site of the Work in a prominent and accessible place where it can be easily seen by the workers.

27.1.2 Any class of laborers or mechanics, including helpers, and which is to be employed under the Contract which is not listed in the wage determination shall be classified in conformance with the wage determination. An additional classification and wage rate and fringe benefits will not be approved unless when the following criteria have been met:

27.1.2.1 The Work to be performed by the classification requested is not performed by a classification in the wage determination; and

27.1.2.2 The classification is utilized in the area by the construction industry; and

27.1.2.3 The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

27.1.3 If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the District agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the Contractor to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210.

27.1.4 In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and the District do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the Contractor shall provide the questions, including the views of all interested parties and the recommendation of the District, to the District for the District's review and referral to the Administrator for determination.

27.1.5 The wage rate (including fringe benefits where appropriate) determined pursuant to this section, shall be paid to all workers performing Work in the classification under this Contract from the first day on which Work is performed in the classification.

27.1.6 Whenever the minimum wage rate prescribed in any applicable wage determination for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

27.1.7 If the Contractor does not make payments to a trustee or other third person, the Contractor may consider, as part of the wages of any laborer or mechanic, the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. If the Secretary of Labor so requires, the Contractor shall set aside in a separate account sufficient assets to meet obligations under the plan or program.

27.2 Withholding. District may, upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the Contractor under this Contract or any other Federal contract with the same Contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any Subcontractor the full amount of wages required by the Contract. In the event of Contractor's or any Subcontractors' failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the Site of the Work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the Contract, the District may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as it deems necessary to cause the

suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

27.3 □ Payrolls and basic records.

27.3.1 □ Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the Work and preserved for a period of three years thereafter for all laborers and mechanics working at the Site of the Work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records that show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

27.3.2 □ The Contractor shall submit weekly for each week in which any Contract Work is performed a copy of all payrolls to the District. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information shall be submitted on a form acceptable to the District. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <https://www.dol.gov/whd/programs/dbra/wh347.htm> or its successor site. Contractor is responsible for the submission of copies of payrolls by all Subcontractors. Contractor and Subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the District, the Contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. Contractor may require a Subcontractor to provide addresses and social security numbers to the Contractor for its own records, without weekly submission to the District or other government agency

27.3.3 □ Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or Subcontractor or his or her agent who pays or supervises the payment of the persons employed under the Contract and shall certify the following:

27.3.3.1 That the payroll for the payroll period contains the information required to be provided under 29 CFR 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5,

27.3.3.2 That the appropriate information is being maintained under 29 CFR 5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and

27.3.3.3 That such information is correct and complete;

27.3.3.4 That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the Contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and

27.3.3.5 That no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

27.3.3.6 That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of Work performed, as specified in the applicable wage determination incorporated into or applicable to the Contract.

27.3.3.7 The weekly submission of a properly executed certification in the form set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 27.3.3 of this section.

27.3.3.8 The falsification of any of the above certifications may subject the Contractor or one or more Subcontractors to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

27.3.3.9 The Contractor or Subcontractor shall make the records required under this section available for inspection, copying, or transcription by authorized representatives of the District or the federal Department of Labor, and shall permit representatives to interview employees during working hours on the job. If the Contractor or Subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

27.4 Apprentices and trainees

27.4.1 Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the Work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first ninety (90) days of probationary employment as an apprentice in an eligible apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a

State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job Site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of Work actually performed. In addition, any apprentice performing Work on the job Site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the Work actually performed. Where a Contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or Subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the Work performed until an acceptable program is approved.

27.4.2 □ Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to Work at less than the predetermined rate for the Work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job Site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of Work actually performed. In addition, any trainee performing Work on the job Site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the Work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less

than the applicable predetermined rate for the Work performed until an acceptable program is approved.

27.4.3 Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

27.5 Compliance with Copeland Act requirements. Contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this Contract.

27.6 Subcontracts. The Contractor or Subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the Federal agency may by appropriate instructions require, and also a clause requiring the Subcontractors to include these clauses in any lower tier subcontracts. The Contractor shall be responsible for the compliance by any Subcontractor or lower tier Subcontractor with all the Contract clauses in 29 CFR 5.5.

27.7 Contract termination: debarment. A breach of the Contract clauses in 29 CFR 5.5 may be grounds for termination of the Contract, and for debarment as a Contractor and a Subcontractor as provided in 29 CFR 5.12.

27.8 Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this Contract.

27.9 Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this Contract shall not be subject to the general disputes clause of this Contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its Subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

27.10 Certification of eligibility.

27.10.1 By entering into this Contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

27.10.2 No part of this Contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

27.10.3 Contractor shall be subject to the penalty for making false statements prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

27.11 □ Clauses Mandated by Contract Work Hours and Safety Standards Act.

As used in the following paragraphs, the terms laborers and mechanics include watchmen and guards.

27.11.1 □ Overtime requirements. No Contractor or Subcontractor contracting for any part of the Contract Work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such Work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

27.11.2 □ Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in the foregoing paragraph the Contractor and any Subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such Contractor and Subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the foregoing paragraph, in the sum of \$10 for each calendar day on which such individual was required or permitted to Work in excess of the standard workweek of forty hours without payment of the overtime wages required by the foregoing paragraph.

27.11.3 □ Withholding for unpaid wages and liquidated damages. The District may upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of Work performed by the Contractor or Subcontractor under the Contract or any other Federal contract with the same Contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same Contractor, such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or Subcontractor for unpaid wages and liquidated damages as provided in the foregoing paragraph.

27.11.4 □ Subcontracts. The Contractor or Subcontractor shall insert in any subcontracts the foregoing paragraphs concerning "Overtime requirements" and "Violation; liability for unpaid wages; liquidated damages" and also a clause requiring each Subcontractor to include these clauses in any lower tier subcontracts. Contractor shall be responsible for compliance by any Subcontractor or lower tier Subcontractor with the clauses set forth in paragraphs 27.11.1 through 27.11.4 of this section.

16. Preliminary Schedule of Values

The preliminary schedule of values shall include, at a minimum, the following information and the following structure:

Replace provision in the General Conditions with the following provisions:

16.1.1.2.3. The preliminary schedule of values shall not provide for values any greater than the following percentages of the Contract value:

16.1.2.3.1 Mobilization and layout combined to equal not more than [1]%;

16.1.1.2.3.2 Submittals, samples and shop drawings combined to equal not more than [3]%;

16.1.1.2.3.3 Bonds and insurance combined to equal not more than [2]%.

END OF DOCUMENT

HAZARDOUS MATERIALS
PROCEDURES & REQUIREMENTS

1.□ Summary

This document includes information applicable to hazardous materials and hazardous waste abatement.

2.□ Notice of Hazardous Waste or Materials

- a. Contractor shall give notice in writing to the District, the Construction Manager, and the Architect promptly, before any of the following materials are disturbed, and in no event later than twenty-four (24) hours after first observance, of any:
 - (1) Material that Contractor believes may be a material that is hazardous waste or hazardous material, as defined in section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law;
 - (2) Other material that may present a substantial danger to persons or property exposed thereto in connection with Work at the site.
- b. Contractor's written notice shall indicate whether the hazardous waste or material was shown or indicated in the Contract Documents to be within the scope of Work, and whether the materials were brought to the site by Contractor, its Subcontractors, suppliers, or anyone else for whom Contractor is responsible. As used in this section the term "hazardous materials" shall include, without limitation, asbestos, lead, Polychlorinated biphenyl (PCB), petroleum and related hydrocarbons, and radioactive material.
- c. In response to Contractor's written notice, the District shall investigate the identified conditions.
- d. If the District determines that conditions do not involve hazardous materials or that no change in terms of Contract is justified, the District shall so notify Contractor in writing, stating reasons. If the District and Contractor cannot agree on whether conditions justify an adjustment in Contract Price or Contract Time, or on the extent of any adjustment, Contractor shall proceed with the Work as directed by the District.
- e. If after receipt of notice from the District, Contractor does not agree to resume Work based on a reasonable belief it is unsafe, or does not agree to resume Work under special conditions, then District may order such portion of Work that is in connection with such hazardous condition or such affected area to be deleted from the Work, or performed by others, or District may invoke its rights to terminate the Contract in whole or in part. District will determine entitlement to or the amount or extent of an adjustment, if any, in Contract Price or Contract Time as a result of deleting such portion of Work, or performing the Work by others.

- f. If Contractor stops Work in connection with any hazardous condition and in any area affected thereby, Contractor shall immediately redeploy its workers, equipment, and materials, as necessary, to other portions of the Work to minimize delay and disruption.

3. □ Additional Warranties and Representations

- a. Contractor represents and warrants that it, its employees, and its subcontractors and their employees, shall at all times have the required levels of familiarity with the Site and the Work, training, and ability to comply fully with all applicable laws and contractual requirements for safe and expeditious performance of the Work, including whatever training is or may be required regarding the activities to be performed (including, but not limited to, all training required to address adequately the actual or potential dangers of Contract performance).
- b. Contractor represents and warrants that it, its employees, and its subcontractors and their employees, shall at all times have and maintain in good standing any and all certifications and licenses required by applicable federal, state, and other governmental and quasi-governmental requirements applicable to the Work.
- c. Contractor represents and warrants that it has studied carefully all requirements of the Specifications regarding procedures for demolition, hazardous waste abatement, or safety practices, specified in the Contract, and prior to submitting its bid, has either (a) verified to its satisfaction that the specified procedures are adequate and sufficient to achieve the results intended by the Contract Documents, or (b) by way of approved "or equal" request or request for clarification and written Addenda, secured changes to the specified procedures sufficient to achieve the results intended by the Contract Documents. Contractor accepts the risk that any specified procedure will result in a completed Project in full compliance with the Contract Documents.

4. □ Monitoring and Testing

- a. District reserves the right, in its sole discretion, to conduct air monitoring, earth monitoring, Work monitoring, and any other tests (in addition to testing required under the agreement or applicable law), to monitor Contract requirements of safe and statutorily compliant work methods and (where applicable) safe re-entry level air standards under state and federal law upon completion of the job, and compliance of the work with periodic and final inspection by public and quasi-public entities having jurisdiction.
- b. Contractor acknowledges that District has the right to perform, or cause to be performed, various activities and tests including, but not limited to, pre-abatement, during abatement, and post-abatement air monitoring, that District shall have no obligation to perform said activities and tests, and that a portion of said activities and tests may take place prior to the completion of the Work by Contractor. In the event District elects to perform these activities and tests, Contractor shall afford District ample access to the Site and all areas of the Work as may be necessary for the performance of these activities and tests. Contractor will include the potential impact of these

activities or tests by District in the Contract Price and the Scheduled Completion Date.

- c. Notwithstanding District's rights granted by this paragraph, Contractor may retain its own industrial hygiene consultant at Contractor's own expense and may collect samples and may perform tests including, but not limited to, pre-abatement, during abatement, and post-abatement personal air monitoring, and District reserves the right to request documentation of all such activities and tests performed by Contractor relating to the Work and Contractor shall immediately provide that documentation upon request.

5. Compliance with Laws

- a. Contractor shall perform safe, expeditious, and orderly work in accordance with the best practices and the highest standards in the hazardous waste abatement, removal, and disposal industry, the applicable law, and the Contract Documents, including, but not limited to, all responsibilities relating to the preparation and return of waste shipment records, all requirements of the law, delivering of all requisite notices, and obtaining all necessary governmental and quasi-governmental approvals.
- b. Contractor represents that it is familiar with and shall comply with all laws applicable to the Work or completed Work including, but not limited to, all federal, state, and local laws, statutes, standards, rules, regulations, and ordinances applicable to the Work relating to:
 - (1) The protection of the public health, welfare and environment;
 - (2) Storage, handling, or use of asbestos, PCB, lead, petroleum based products, radioactive material, or other hazardous materials;
 - (3) The generation, processing, treatment, storage, transport, disposal, destruction, or other management of asbestos, PCB, lead, petroleum, radioactive material, or hazardous waste materials or other waste materials of any kind; and
 - (4) The protection of environmentally sensitive areas such as wetlands and coastal areas.

6. Disposal

- a. Contractor has the sole responsibility for determining current waste storage, handling, transportation, and disposal regulations for the job Site and for each waste disposal facility. Contractor must comply fully at its sole cost and expense with these regulations and any applicable law. District may, but is not obligated to, require submittals with this information for it to review consistent with the Contract Documents.
- b. Contractor shall develop and implement a system acceptable to District to track hazardous waste from the Site to disposal, including appropriate "Hazardous Waste Manifests" on the EPA form, so that District may track the volume of waste it put in each landfill and receive from each landfill a certificate of receipt.

- c. Contractor shall provide District with the name and address of each waste disposal facility prior to any disposal, and District shall have the express right to reject any proposed disposal facility. Contractor shall not use any disposal facility to which District has objected. Contractor shall document actual disposal or destruction of waste at a designated facility by completing a disposal certificate or certificate of destruction forwarding the original to the District.

7.□ Permits

- a. Before performing any of the Work, and at such other times as may be required by applicable law, Contractor shall deliver all requisite notices and obtain the approval of all governmental and quasi-governmental authorities having jurisdiction over the Work. Contractor shall submit evidence satisfactory to District that it and any disposal facility:
 - (1) have obtained all required permits, approvals, and the like in a timely manner both prior to commencement of the Work and thereafter as and when required by applicable law; and
 - (2) are in compliance with all such permits, approvals and the regulations.

For example, before commencing any work in connection with the Work involving asbestos-containing materials, or PCBs, or other hazardous materials subject to regulation, Contractor agrees to provide the required notice of intent to renovate or demolish to the appropriate state or federal agency having jurisdiction, by certified mail, return receipt requested, or by some other method of transmittal for which a return receipt is obtained, and to send a copy of that notice to District. Contractor shall not conduct any Work involving asbestos-containing materials or PCBs unless Contractor has first confirmed that the appropriate agency having jurisdiction is in receipt of the required notification. All permits, licenses, and bonds that are required by governmental or quasi-governmental authorities, and all fees, deposits, tap fees, offsite easements, and asbestos and PCB disposal facilities expenses necessary for the prosecution of the Work, shall be procured and paid for by Contractor. Contractor shall give all notices and comply with the all applicable laws bearing on the conduct of the Work as drawn and specified. If Contractor observes or reasonably should have observed that Plans and Specifications and other Contract Documents are at variance therewith, it shall be responsible for promptly notifying District in writing of such fact. If Contractor performs any Work contrary to applicable laws, it shall bear all costs arising therefrom.

- b. In the case of any permits or notices held in District's name or of necessity to be made in District's name, District shall cooperate with Contractor in securing the permit or giving the notice, but the Contractor shall prepare for District review and execution upon approval, all necessary applications, notices, and other materials.

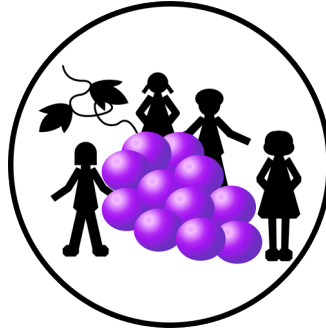
8.□ Indemnification

To the fullest extent permitted by law, the indemnities and limitations of liability expressed throughout the Contract Documents apply with equal force and effect to any claims or liabilities imposed or existing by virtue of the removal, abatement, and disposal of hazardous waste. This includes, but is not limited to, liabilities connected to the selection and use of a waste disposal facility, a waste transporter, personal injury, property damage, loss of use of property, damage to the environment or natural resources, or "disposal" and "release" of materials associated with the Work (as defined in 42 U.S.C. § 9601 *et seq.*).

9.□ Termination

District shall have an absolute right to terminate for default immediately without notice and without an opportunity to cure should Contractor knowingly or recklessly commit a material breach of the terms of the Contract Documents, or any applicable law, on any matter involving the exposure of persons or property to hazardous waste. However, if the breach of contract exposing persons or property to hazardous waste is due solely to an ordinary, unintentional, and non-reckless failure to exercise reasonable care, then the procedures for termination for cause shall apply without modification.

END OF DOCUMENT



PROJECT MANUAL
INCLUDING SPECIFICATIONS

FOR

**BEAR CREEK HIGH SCHOOL
NEW AGRICULTURAL SCIENCE BUILDING
INCREMENT 1**

Lodi Unified School District

**10555 THORNTON RD
STOCKTON, CA 95209**

ARCHITECT

SVA ARCHITECTS
2030 Franklin St., Suite 210
Oakland, CA 94612
Telephone: (510) 267-3180

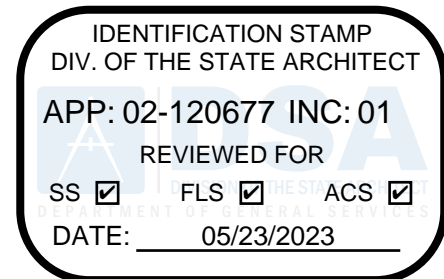
SVA Project Number: 2022-40119

February 18, 2023

SECTION 00 00 01

SEALS PAGE

Specification Approval for:
Lodi Unified School District
Bear Creek High School New Agricultural Science Building – Increment 1



Robert Simons, AIA
Architect, SVA Architects Inc.

C-18301



Raymond W. Swartz
Electrical Engineer, TK1SC

E-15610

SECTION 00 01 10

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**PROJECT MANUAL
INTRODUCTORY INFORMATION**

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SUMMARY OF WORK

PART 1 - GENERAL

1.1 SUMMARY

- A. Project consists of construction of the ***New Agricultural Science Building*** at Bear Creek High School located at 10555 Thornton Rd, Stockton, CA 95209, as indicated in Contract Documents.
 - 1. DSA Increments
 - a. DSA Increment 1 includes grading, sitework, and underground utilities.
 - b. DSA Increment 2 includes all scope not included in Increment 1 and shall provide all necessary scope for a full operational and complete project.
 - 2. Owner reserves right to remove and retain possession of existing items prior to start of Contract.
 - 3. Removal of hazardous material shall be per separately provided hazardous material abatement report prepared by others. Architect shall not be involved in determination, removal or disposal of hazardous materials.

1.2 REQUIREMENTS INCLUDED

- A. This section includes administrative provisions:
 - 1. Work sequence.
 - 2. Contractors use of premises.
 - 3. Field engineering.
 - 4. Regulatory requirements and reference standards.
 - 5. Owner furnished Contractor installed products (OFCI).
 - 6. Owner pre-ordered products.

1.3 WORK SEQUENCE

- A. Coordinate construction schedule and operations with Owner and Architect.
- B. Perform construction in phases as indicated.

1.4 CONTRACTORS USE OF PREMISES

- A. Limit use of premises for Work and construction operations and to allow for work by other contractors.
- B. Coordinate use of premises and access to site under direction of Owner and Architect.

1.5 FIELD ENGINEERING

- A. Provide field engineering services; establish lines and levels by use of recognized engineering survey practices.
- B. Locate and protect control and reference points.

1.6 REGULATORY REQUIREMENTS AND REFERENCE STANDARDS

- A. Regulatory Requirements:
 - 1. Architect has contacted governing authorities and reviewed design requirements of local, state and federal agencies for applicability to Project.
 - 2. Contractor shall be responsible for contacting governing authorities directly for necessary information and decisions bearing upon performance of Work.
- B. Reference Standards:
 - 1. For Products specified by association or trade standards, comply with requirements of referenced standard, except when more rigid requirements are specified or are required by applicable codes.
 - 2. Applicable date of each standard is that in effect as of date on proposal or date on Contract where no proposal is available, except when a specific date is specified.

1.7 OWNER FURNISHED CONTRACTOR INSTALLED PRODUCTS (OFCI)

- A. Select products are to be furnished and paid for by Owner and installed by Contractor:
 - 1. Refer to Drawings and Specifications.
- B. Owner's Responsibilities:
 - 1. Arrange for and deliver shop drawings, product data, and samples to Contractor.
 - 2. Arrange and pay for product delivery to site.
 - 3. Inspect products jointly with Contractor on delivery.
 - 4. Submit claims for transportation damage.
 - 5. Arrange for replacement of damaged, defective, or missing items.
 - 6. Arrange for manufacturer's warranties, inspections, and service.
- C. Contractor's Responsibilities:
 - 1. Review shop drawings, product data, and samples.
 - 2. Receive and unload products at site.
 - 3. Inspect jointly with Owner for completeness and damage.
 - 4. Handle, store, and install products.
 - 5. Finish products as required after installation.
 - 6. Repair or replace items damaged by Work of this Contract.

1.8 OWNER PRE-ORDERED PRODUCTS

- A. Select products have been pre-ordered by Owner:
 - 1. Refer to Drawings.
- B. Owner has negotiated purchase orders for these products for incorporation into Project.
 - 1. Purchase orders are assigned to Contractor; costs shall be included into base bid.
 - 2. Contractor's responsibilities are same as if Contractor negotiated purchase orders.

END OF SECTION

SECTION 01 20 00

PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Special administrative and procedural requirements necessary to prepare and process Application for Payment.

1.2 SCHEDULE OF VALUE

- A. Coordination: Coordinate preparation of Schedule of Values with preparation of Contractor's Construction Schedule.
 - 1. Correlate line items in Schedule of Values with other required administrative forms and schedules, including application for Payment forms with Continuation Sheets, Submittals Schedule, and Contractor's Construction Schedule.
 - 2. Submit Schedule of Values to Architect at earliest possible date but no later than seven days before date scheduled for submittal of initial Application for Payment.
- B. Format and Content: Use Project Manual table of contents as guide to establish line items for Schedule of Values. Provide at least one line item for each Specification Section.
 - 1. Identification: Include following Project identification on Schedule of Values.
 - a. Project name and location.
 - b. Name of Architect.
 - c. Architect's Project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 - 2. Submit draft of AIA Document G703 Continuation Sheets.
 - 3. Provide breakdown of Contract Sum in enough detail to facilitate continued evaluation of Application for Payment and progress reports. Coordinate with Project Manual table of contents.
 - a. Provide several line items for principal subcontract amounts where appropriate.
 - 4. Round amounts to nearest whole dollar; total shall equal Contract Sum.
 - 5. Provide separate line item in Schedule of Values for each part of Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.

6. Provide separate line items in Schedule of Value for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of Work.
7. Each item in Schedule of Values and Application for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in Schedule of Values or distributed as general overhead expense at Contractor's option.
8. Schedule Updating: Update and resubmit Schedule of Values before next application for Payment when Change Orders or Construction Change Directives result in a change in Contract Sum.

1.3 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
 1. Initial Application for Payment: Application for Payment at time of Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: Date for each progress payment is indicated in Agreement between Owner and Contractor. Period of construction Work covered by each Application for Payment is period indicated in Agreement.
- C. Payment Application Forms: AIA Document G702 and AIA Document G703 Continuation Sheets as form for Application for Payment.
- D. Application Preparation: Complete every entry on form. Execute by person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
 1. Entries shall match data on Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
 2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- E. Transmittal:
 1. Contractor shall provide ten copies of Application for Payment one week prior to Payment Request ("Draw") Meeting, for review of team members.
 2. Contractor shall provide ten wet signed copies of Application for Payment at Payment Request ("Draw") Meeting.
 - a. Provide each copy with transmittal form listing attachments and recording appropriate information about application.

- b. Copies shall include waivers of lien and similar attachments if required.
- F. Waivers of Mechanic's Lien: With each Application for Payment submit waivers of mechanic's lien from every entity who is lawfully entitled to file a mechanic's lien arising out of Contract and related to Work covered by 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 final or full waivers.
 - 3. Owner reserves right to designate which entities involved in Work must submit waivers.
 - 4. Waiver Forms: Submit waivers of lien on forms executed in manner acceptable to Owner.
- G. 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. Schedule of unit prices.
 - 5. Submittals Schedule (preliminary if not final).
 - 6. List of Contractor's staff assignments.
 - 7. List of Contractor's principal consultants.
 - 8. Copies of building permits.
 - 9. Copies of authorizations and licenses from authorities having jurisdiction for performance of Work.
 - 10. Initial progress report.
 - 11. Report of preconstruction conference.
 - 12. Certificates of insurance and insurance policies.
- H. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted including but not necessarily limited to following.
 - 1. Evidence of completion of Project closeout requirements.

2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement accounting for final changes to Contract Sum.
4. AIA Document G706, Contractor's Affidavit of Payment of Debts and Claims.
5. AIA Document G706A, Contractor's Affidavit of Release of Liens.
6. AIA Document G707, Consent of Surety to Final Payment.
7. Evidence that claims have been settled.
8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Completion.
9. Final liquidated damages settlement statement.

USE FOLLOWING FOR LEED CERTIFIED PROJECTS.

10. LEED Final Reports: Submit complete set of LEED Reports as required for submittal to USGBC and as specified in Section 01 35 10.

END OF SECTION

SECTION 01 25 00

SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. General: Procedures are described for requesting substitution of unlisted materials in lieu of materials named in Specifications or approved for use in addenda.
 - 1. Provide products listed in Contract Documents, products by manufacturers listed in Contract Documents, and products meeting specified requirements.
 - a. Contract Amount: Base on materials and products included in Contract Documents.
 - b. Where materials and products are listed in Contract Documents, materials and products by manufacturers not listed shall not be used without Owner's and Architect's approval of Contractor's written request for substitution.
 - 2. Purpose: After bidding, substitutions will only be considered where Owner will receive benefit or because specified materials are no longer available due to no fault of Contractor.
 - 3. Purpose: Substitutions will only be considered where Owner will receive benefit or because specified materials are no longer available due to conditions beyond Contractor control.
 - a. Owner benefits either from a Contractor proposed reduction of the Contract amount or from a reduction in Contract time based on acceptance of proposed substitution.
 - b. List proposed cost or time reductions on request for substitution.
 - c. Requests not including a proposed cost or time reduction will not be considered unless Contractor submits supporting information indicating specified materials are not available.
- B. Related Sections:
 - 1. Section 01 60 00: Product requirements.

1.2 SUBSTITUTIONS

- A. Within a period of 35 days after award of Contract, Owner and Architect will consider formal requests for substitutions only from Contractor as specified in 1.1 Summary.
 - 1. Owner and Architect will consider only one request for substitution for each material; where requests are denied Contractor shall be required to provide specified materials.
 - 2. After initial 35-day period, requests will be considered only when a product becomes unavailable through no fault of Contractor; more than one request for substitution will be considered if necessary.
- B. Prior to submittal of second Request for Payment Owner and Architect will consider formal requests for substitutions from Contractor as specified in 1.1 Summary.
 - 1. Owner and Architect will consider only one request for substitution for each material; where requests are denied Contractor shall be required to provide specified materials.
 - 2. After payments begin, requests will be considered only when a product becomes unavailable through no fault of Contractor; more than one request for substitution will be considered if necessary.
- C. Submit each request with sequentially numbered "Substitution Request Transmittal" acceptable to Owner and Architect; submit separate request for each product and support each request with:
 - 1. Product identification with manufacturer's literature and samples where applicable.
 - 2. Name and address of similar projects on which product has been used, and date of installation.
- D. Submit itemized comparison of proposed substitution with product specified and list significant variations.
- E. Submit data relating to changes in construction schedule.
- F. Note effect of substitution on other work, products, or separate contracts.
 - 1. Note if acceptance of substitution could require revision of Contract Documents, Drawings, details or Specifications.
- G. Include accurate cost data comparing proposed substitution with product and amount of net change in Contract price.
 - 1. Include costs to other contractors and costs for revisions to Drawings, details or Specifications.

- H. Substitutions will not be considered for acceptance when:
 - 1. They are indicated or implied on submittals without a formal request from Contractor.
 - 2. They are requested directly by a subcontractor or supplier.
 - 3. Acceptance will require substantial revision of Contract Documents.
- I. Substitute products shall not be ordered without written acceptance of Owner and Architect.
- J. Owner and Architect will determine acceptability of proposed substitutions and reserves right to reject proposals due to insufficient information.

1.3 CONTRACTOR'S REPRESENTATION

- A. Requests constitute a representation that Contractor:
 - 1. Has investigated proposed product and determined it meets or exceeds, in all respects, specified product.
 - 2. Will provide same warranty or longer warranty for substitution as for specified product.
 - 3. Will coordinate installation and make other changes that may be required for Work to be complete in all respects.
 - 4. Waives claims for additional costs that subsequently become apparent.
 - 5. Will pay costs of changes to Contract Documents, Drawings, details and Specifications required by accepted substitutions.

1.4 ARCHITECT'S DUTIES

- A. Review Contractor's requests for substitutions with reasonable promptness.
 - 1. Architect will recommend that Owner accept or reject substitution request.
 - 2. Upon request, Architect will provide cost for changes to Contract Documents, Drawings, details and Specifications required for substitutions.
- B. Notify Contractor in writing of decision to accept or reject requested substitution.

CONTRACTOR'S SUBSTITUTION REQUEST

(Use separate form for each request)

Date: _____ Request No.: _____

TO: **Architect** _____
Phone: _____ Fax: _____

PROJECT: _____ Project No.: _____
CONTRACTOR _____

SPECIFIED ITEM: _____

Section: _____ Page: _____ Paragraph: _____ Description: _____

Drawing Number(s): _____ Detail Number(s): _____

The undersigned request consideration of the following:

PROPOSED SUBSTITUTION: _____

REASON FOR NOT GIVING PRIORITY TO SPECIFIED ITEMS: _____

SAVINGS or CREDIT to OWNER for ACCEPTING SUBSTITUTE: \$ _____

PROJECT COMPLETION CHANGE for ACCEPTING SUBSTITUTE Days _____

Attached data includes description, specifications, drawings, photographs, performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

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

1. Proposed substitution has been fully checked and coordinated with the Contract Documents.
2. The proposed substitution does not affect dimensions shown on Drawings.
3. The proposed substitution does not require revisions to mechanical or electrical work.
4. The undersigned will pay for changes to the building design, including architectural and engineering design, detailing, and construction costs caused by the requested substitution.
5. The proposed substitution will have no adverse effect on other trades, construction schedule, or warranty.
6. Maintenance and service parts will be locally available for the proposed substitution.
7. The proposed substitution will have no adverse effect on LEED credits (applies to LEED Projects ONLY)
8. The proposed substitution will have no adverse effect on Green Building Requirements where applicable.

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

Attachments: The attached data is furnished herewith for evaluation of the proposed substitution.

☐ Catalog ☐ Drawings ☐ Samples ☐ Reports ☐ Tests ☐ Other: _____

Submitted by: _____

(Firm) _____
(Authorized Legal Signature)

(Address) _____
(Telephone)

For use by the Architect: ☐ Accepted ☐ Accepted as Noted ☐ Rejected: Submit Specified Item

BY: _____
(Authorized Signature)

Date: _____ Remarks: _____

**BEAR CREEK HIGH SCHOOL
NEW AGRICULTURAL SCIENCE BUILDING – INC 1
STOCKTON, CALIFORNIA**

11/23/2022

END OF SECTION

SECTION 01 26 00

CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: This section specifies administrative and procedural requirements governing Contract modification procedures.
 - 1. Requests for Information (RFI).
 - 2. Change Order.
 - 3. Allowances.
 - 4. Construction Change Directive.
- B. Related Requirements:
 - 1. Section 01 25 00: Substitution procedures.
 - 2. Section 01 30 00: Administrative requirements.

1.2 MINOR CHANGES IN WORK

- A. Architect will issue supplemental instructions authorizing minor changes in Work, not involving adjustment to Contract Sum or Contract Time, on AIA Form G710, Architect's Supplemental Instructions or similar form.

1.3 REQUESTS FOR INFORMATION

- A. Contractor may submit a written Request for Information (RFI) in format approved by Architect relating to perceived inconsistencies and omissions in Contract Documents.
 - 1. A record of RFI's is to be maintained by Contractor along with information regarding origin of request, date of request, and date request was received from Architect. Number RFI's sequentially based on date of request.
- B. Requests for Information shall be used only as a means of obtaining clarification of information not included in Contract Documents and shall not be used to assist Contractor in preparation of shop drawings or other information required by Contract.
 - 1. Contract Documents are intended to contain enough information to show aesthetic and design intent and to provide information such that construction procedures (means and methods) may be reasonably inferred.
 - 2. Contract Documents are not intended to provide specific information related to means and methods of construction nor are they intended to be exhaustive in content.
- C. Contractor shall carefully review requests for information by subcontractors and suppliers to ascertain if information is in Contract Documents prior to submitting a Request for Information to Architect based on requests by others.

1. Contractor may suggest possible solutions to fit Project conditions where appropriate.
- D. Architect reserves right to return RFI's that do not reasonably relate to necessary clarification of intent of Contract Documents and to charge Contractor for time and materials involved in answering RFI's where information is in Contract Documents.
 1. RFI's shall not be used as a request for substitutions; refer to Section 01 25 00 – Substitution Procedures.

1.4 CHANGE ORDERS

- A. Owner-Initiated Proposal Requests: Architect will issue detailed description of proposed changes in Work that require adjustment to Contract Sum or Contract Time. If necessary, description will include supplemental or revised Drawings and Specifications.
 1. Proposal requests issued by Architect are for information only. Do not consider changer order proposal requests as instruction either to stop work in progress or to execute proposed change.
 2. Within 10 days of receipt of a proposal request, submit estimate of cost necessary to execute change to Architect for Owner's review.
 - a. Include list of quantities of products required and unit costs, with total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental and amounts of trade discounts.
 - c. Include a statement indicating effect of proposed change in Work will have on Contract Time.
- B. Contractor-Initiated Proposals: When latent or unforeseen conditions require modifications to Contract, Contractor may propose changes by submitting a request for a change to Architect and Owner.
 1. Include statement of reasons for change and effect of change on Work. Provide a complete description of proposed change. Indicate effect of proposed change on Contract Sum and Contract Time.
 2. Include a list of quantities of products required and unit costs with total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.
 3. Indicate applicable taxes, delivery charges, equipment rental and amounts of trade discounts.
 4. Comply with requirements in Section 01 25 00 - Substitution Procedures if proposed change requires substitution of unspecified product or system for specified product or system.

- C. Proposal Request Form: Use AIA Document G709 for Change Order Proposal Requests; other substitute formats shall be submitted to Owner and Architect for approval prior to use.
- D. Change Order Procedures: Contractor shall be directed to proceed with Work upon Owner's approval of Proposal.
 - 1. Architect will issue Change Order for signatures of Owner and Contractor on AIA Form G701 or similar form, including approved Change Order proposals for that time period.
 - 2. Amounts of each Change Order shall be indicated in each Request for Payment including payment status for each individual Change Order.

1.5 ALLOWANCES

- A. Allowance Adjustment: For Contract items bid based on allowance, submit Change Order Proposal on difference between actual purchase amount and allowance, based on work-in-place.
 - 1. Include installation cost in purchase amount only where indicated as part of allowance.
 - 2. When requested, prepare explanations and documentation to substantiate amounts claimed for work done based on allowances.
 - 3. Submit substantiation of a change in Scope of work claimed in Change Orders related to allowances.
 - 4. Owner reserves right to establish actual quantity of work-in-place by independent quantity survey, measure or count.
- B. Submit claims for increase costs because of a change in scope or nature of allowance described in Contract Documents, whether for purchase order amount or Contractor's handling, labor, installation, overhead and profit.
 - 1. Submit claims within 21 days of receipt of Change Order or Construction Change Directive authorizing work to proceed. Owner will reject claims submitted later than 21 days.
 - 2. Do not include Contractor's or subcontractor's indirect expense in Change Order cost amount unless it is clearly shown that nature or extent of work has changed from what could have been foreseen from information in Contract Documents.
 - 3. No change to Contractor's indirect expense is permitted for selection of higher or lower-priced materials or systems of same scope and nature as originally indicated.

1.6 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: When Owner and Contractor disagree on terms of Proposal Request, Architect may issue a Construction Change Directive per AIA Form G714 or similar form.
 - 1. Construction Change Directive instructs Contractor to proceed with change in Work, for subsequent inclusion in Change Order.
 - 2. Construction Change Directive contains a complete description of change in Work. It also designates method to be followed to determine change in Contract Sum or Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of Work required by Construction Change Directive. Coordinate scheduling with Construction Manager to allow monitoring by Owner if desired.
 - 1. After completion of change, submit itemized account and supporting data necessary to substantiate cost and time adjustments to Contract.

END OF SECTION

SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This section describes general procedural requirements for ongoing submittals.
 - 1. Schedule of values.
 - 2. Product data and manufacturer's literature.
 - 3. Shop drawings.
 - 4. Samples.
 - 5. Manufacturers' certificates.
 - 6. Excess materials and attic stock.
 - 7. Design build (delegated design) procedures.
 - 8. Deferred approval requirements.
- B. Related Requirements:
 - 1. Section 01 31 00: Project management and coordination.
 - 2. Section 01 32 00: Construction Schedule – Network Analysis.
 - 3. Section 01 32 10: Construction Schedule – Bar Chart.
 - 4. Section 01 40 00: Test reports, manufacturer's field reports, and mock-ups.
 - 5. Section 01 70 00: Manufacturers' instructions.
 - 6. Section 01 77 00: Closeout requirements including Project Record Documents.
 - 7. Section 01 78 00: Warranties.

1.2 GENERAL SUBMITTAL PROCEDURES

- A. Submittals: Transmit each item using form approved by Architect; submit sample to Architect for approval prior to use.
 - 1. Identify Project, Contractor, subcontractor, major supplier.
 - a. Attach sequential identification number for each new submittal.
 - b. Identify each resubmittal using original submittal number and sequential identification clearly indicating item is resubmitted.
 - 2. Identify pertinent Drawing sheet and detail number, and Specification section number as appropriate.
 - 3. Identify deviations from Contract Documents.
 - 4. Provide space for Contractor and Architect review stamps.

5. Contractor: Review and stamp submittals from subcontractors prior to submitting to Architect.
 - a. Review submittals and indicate where conflicts occur with Contract Documents and with work of other subcontractors.
 - b. Return submittals that vary significantly from Contract Documents for correction and resubmittal prior to submitting to Architect.
 - c. Submittals that vary significantly from Contract Documents and that fail to indicate thorough Contractor review prior to submission to Architect will be returned without review.
 - d. cursory review and stamping of subcontractor submittal by Contractor shall not be acceptable.
- B. Initial Schedules: Submit initial progress schedule and schedule of value in duplicate within 15 working days after award of Contract.
 1. After review by Owner and Architect revise and resubmit where required.
- C. Comply with progress schedule for submittals related to Work progress. Coordinate submittal of related items.
- D. After Architect review of submittal, revise and resubmit as required, identify changes made since previous submittal.
- E. Distribute copies of reviewed submittals to concerned persons. Instruct recipients to promptly report any inability to comply.

1.3 TYPES OF SUBMITTALS

- A. General: Project requires various types of submittals to maintain communications, minimize misunderstandings, avoid unnecessary conflicts, and to ensure complete documentation for Project Record Documents.
 1. Maintain complete set of submittals including required revisions.
- B. Construction Schedules: Submit construction progress schedules for Design Team and Owner review and to maintain entire team up-to-date on construction activities.
- C. Schedule of Values: Submit Schedule of Values indicating division of Work, subcontractors to perform work, products being used, and values attributed to each to inform Design Team and Owner.
- D. Action Submittals: Submittals relating to product data and manufacturer's literature, shop drawings, and samples for Design Team review and comment; do not begin fabrication, delivery, or installation until Design Team review is complete.

- E. Information Submittals: Submittals relating to certifications, qualifications, reports, including test reports, and instructions are for information; Design Team may choose to comment but action is not generally anticipated.
 - 1. Manufacturer installation instructions and recommendations shall be considered information submittals.
- F. Design/Build Submittals: Where portion of Work requires design by specialized professionals submit information necessary to ensure work complies with Contract Documents along with certifications signed by qualified professional.
 - 1. Calculations: Do not submit calculations unless specifically required by Contract Documents; submit calculations required by applicable authorities directly to applicable authorities;
 - a. Submit certification by qualified professional indicating required calculations have been prepared and work conforms to Contract Documents and applicable codes and regulations.
- G. Maintenance Materials Submittals: Compile maintenance information and materials during Work to ensure complete set of documents, maintenance manuals, and operation instructions.
- H. Closeout Submittals: Compile closeout submittals, organize, and submit to Owner prior to or at time of Substantial Completion. Project will not be considered Substantially Complete until closeout submittals have been received by Owner.
- I. Material Safety Data Sheets (MSDS): MSDS will only be reviewed by Architect when submitted to show compliance with LEED certification requirements.
 - 1. Non-LEED submittals that include material safety data sheets will be returned for resubmittal.

1.4 SCHEDULE OF VALUES

- A. Submit typed schedule on AIA Form G703 or another Owner and Architect pre-approved 8-1/2" by 11" paper format; Contractor's standard media-driven printout will be considered on request. Submit within 15 days after award of Contract.
- B. Format: Table of Contents of this Project Manual, with modifications as pre-approved by Owner and Architect; identify each line item with number and title of major Specification sections.
- C. Include in each line item a directly proportional amount of Contractor overhead and profit.
- D. Revise schedule to list change orders for each Application for Payment.
 - 1. Submit subschedule for each phase of Work.

1.5 PRODUCT DATA/MANUFACTURERS' LITERATURE

- A. Action Submittals: Mark each copy to identify applicable Products, models, options, and other data; supplement manufacturers' standard data to provide information unique to the Work.
- B. Information Submittals: Include manufacturers' installation instructions only when required by Specifications or specifically requested by Architect.
 - 1. Maintain copy of manufacturer installation instructions and recommendations in Contractor's field office for review.
- C. Product data shall be submitted as electronic PDF files unless otherwise noted or approved by Architect in advance.
 - 1. Where paper copies are permitted submit number of copies Contractor requires, plus one copy to be retained by Architect.
- D. Submit number of copies Contractor requires, plus one copy to be retained by Architect.

1.6 SHOP DRAWINGS

- A. Shop drawings shall be submitted as electronic PDF files unless otherwise noted or approved by Architect in advance.
 - 1. Where prints are permitted submit one reproducible print; minimum sheet size 8-1/2" by 11".
- B. Shop drawings shall be submitted in reproducible format acceptable to Architect and Owner; computerized PDF files will be acceptable unless otherwise directed.
 - 1. Prints: Submit one reproducible print; minimum sheet size 8-1/2" by 11".
 - 2. Prints: Submit three reproducible prints; minimum sheet size 8-1/2" by 11".
- C. Distribution: After review, reproduce and distribute.

1.7 SAMPLES

- A. Submit full range of manufacturers' standard colors, textures, and patterns for Architect's selection.
- B. Submit samples to illustrate functional characteristics of Product, with integral parts and attachment devices.
- C. Coordinate submittal of different categories for interfacing work.
- D. Include identification on each sample, giving full information.

E. Submit number of samples required by Contractor plus one to be retained by Architect.

1. Maintain one set of approved samples at Project Field Office.

F. Sizes: Provide following sizes unless otherwise specified.

1. Flat or Sheet Products: Minimum 6" square, maximum 12" by 12".

2. Linear Products: Minimum 6", maximum 12" long.

3. Bulk Products: Minimum one pint, maximum one gallon.

G. Full size samples may be used in the Work upon approval.

1.8 MANUFACTURERS' CERTIFICATES

A. Submit certificates, in duplicate in accordance with requirements of each Specification section.

1.9 EXCESS MATERIALS AND ATTIC STOCK

A. Excess Materials: Excess materials shall be considered property of Owner; inform Owner of extent of excess materials and methods required for handling and storage; remove from site excess materials not required by Owner for maintenance stock.

B. Attic Stock: Owner may choose to obtain additional attic stock for maintenance purposes where excess materials are not considered adequate.

1. Owner may require as much as 5% extra materials for maintenance purposes. Exact amount of each material shall be determined by Owner based on following meeting and additional costs determined by Contractor.

a. Contractor shall be prepared to order up to 5% extra materials on items that may not be readily available in future such as custom colors, off-shore manufacture, anticipated life span under 5 years, and potential for damage.

1) Do not order extra attic stock until extent is determined and agreed to by Owner including which materials require extra stock and exactly how much those materials will cost including shipping and handling.

b. Excess Materials: Furnish excess materials only for materials that have a shelf-life of more than three years.

2. Meeting: Conduct meeting prior to beginning Work to discuss extent of materials Owner would like to receive at Project Closeout for attic stock for maintenance materials; where available include personnel from Owner's maintenance crew.

a. Estimate amount of excess materials to be anticipated to be ordered in addition to materials for handling and storage and how those materials will be invoiced and identified regarding material and location in Project.

- b. Determine area necessary for adequate storage, handling, and identifying excess materials and attic stock and discuss with Owner.
 - c. Submit information regarding equipment necessary for handling of excess materials and attic stock due to weight, size, and storage requirements.
 - d. Assist Owner in determining where on-site or off-site additional attic stock for maintenance purposes will be delivered and stored.
3. Additional Costs: After meeting submit to Owner detailed listing of additional costs for each material Owner may like to receive for attic stock and assist Owner in modifying listing to determine acceptable final costs.
 - a. Include unit prices for desired attic stock where excess materials are not adequate for Owner maintenance stock.
4. Substantial Completion: Submit Construction Bulletin at Substantial Completion indicating changes to Contract Amount for attic stock including unit price totals for materials where excess materials are not adequate.
5. Final Completion: Ensure attic stock has been received, identified, cataloged, and stored at locations agreed upon with Owner based on Change Order indicating amounts finally agreed to by Owner.

1.10 DESIGN/BUILD PROCEDURES

- A. Design as Part of Means and Methods of Construction: Select Project components require construction team design as part of means and methods of construction as described in various sections.
 1. Terms commonly used such as Design/Build, Delegated Design, and Design/Assist are applicable to these procedures as determined by law but shall be generally referred to in these documents as Design/Build.
 - a. In general Design/Build includes design by licensed professionals with expertise beyond that allowed under standard architectural licensure, and outside of scope of work of other design professionals on the design team.
 2. Contractor may be required to provide design services as part of construction for specific work defined as design or design-build where special expertise is required that is not available in the Project design team.
 3. Subcontractors, fabricators, and manufacturers may be required to provide design services as part of their work due to special expertise in design services for their specific components, refer to technical sections for Design/Build.

4. Contractor, subcontractors, fabricators, manufacturers, and suppliers shall be responsible for attachments, anchors, fasteners, adhesives, and connectors suitable to applications unless specific items are listed in Contract Documents.
 - a. Where specific items are listed in Contract Documents Contractor, subcontractors, fabricators, manufacturers, and suppliers shall review and submit comments where items listed are not acceptable.
 - b. Where no comments are received, listed items shall be considered acceptable.
- B. Contractor acknowledges and accepts responsibility for specialty design as part of means and methods of construction, as well as coordination of parties involved to achieve architectural design intent indicated in Contract Documents.
 1. Design-build work includes sizing, sequencing, and detailing for construction by professional licensed or registered engineer or design professional with special expertise applicable to portion of Work involved.
 2. Design-build work shall be constructed in compliance with building codes and regulations in effect and shall be fit and proper for intended use.
 3. Design-build work shall include drawings, specifications, and calculations prepared, stamped, and signed by qualified professional licensed or registered engineer licensed in the Project location as appropriate to design-build work.
 - a. Plans, specifications, and calculations shall be acceptable to Owner, Owner's Representative, and applicable authorities.
- C. Where required by Owner Contractor shall submit copies of current insurance policies covering errors and omissions of persons designing design-build work with deductibles and limits per occurrence as mutually agreed by Owner and Contractor.
 1. Provide endorsement to insurance providing for 30-day notice to Owner prior to cancellation or material reduction in coverage.
 2. Insurance shall be maintained for not less than applicable statute of limitations for claims of latent defects, if such insurance is not written on an occurrence basis during time design-build work is designed and constructed.

- D. Review proposed layouts with Design Team and with various trades prior to commencing work related to design-build work.

1.11 DEFERRED APPROVAL REQUIREMENTS

- A. Installation of deferred approval items shall not be started until detailed plans, specifications, and engineering calculations have been accepted and signed by Architect or Engineer of Record responsible for Project design.
- B. Deferred Approval Items shall be signed by California registered architect or professional engineer delegated responsibility covering specific work shown requiring approval by Division of the State Architect.
 - 1. Deferred approval items for this Project include but may not be limited to following:
 - a. Translucent Walls and Roofs – Section 08 45 00.
 - b. Telescopic Bleachers – Section 12 66 01.
 - c. Grandstands – Section 13 34 16.
 - d. Hydraulic Elevators – Section 14 24 00.
 - 2. Deferred approval drawings and specifications become part of the approved submittal documents for the Project when they are submitted to and approved by Division of the State Architect.
 - 3. Submit four prints of each drawing. Drawings shall include empty 7” by 9” space on first sheet reserved for Architect to add “General Conformance Block” required for DSA.
 - 4. Submit four copies of calculations, product data and test reports.
 - 5. Identify and specify supports, fasteners, spacing, penetrations, etc., for each deferred approval items, including calculations for each fastener.
 - 6. Submit documents to Architect of Record for review.
 - 7. Deferred submittal documents shall bear stamp and signature of architect or engineer licensed in State of California and responsible for work shown on deferred submittal documents.
 - 8. Architect of Record will forward submittal to appropriate Project Engineer.
 - 9. Review of Project Architect or Engineer of Record is for conformance with design concept shown on Contract Documents. Neither Architect or Engineer of Project shall be responsible for review for correctness of deferred approval items.
 - 10. After review by Architect/Engineer of Record, Architect of Record will forward two copies of submittal to Division of the State Architect for approval.

11. Respond to review comments made by Division of the State Architect and revise and resubmit submittal for final approval.
12. Architect of Record will forward two copies of final revised submittal to the Division of the State Architect for approval.
13. The Division of the State Architect will return one copy of final submittal to the Architect of Record.
14. Architect of Record will forward one copy of evidence of submittal approval by Division of the State Architect for final distribution by General Contractor.

END OF SECTION

SECTION 01 31 00

PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Description of Project management and coordination including but not necessarily limited to the following:
 - 1. General Project coordination procedures.
 - 2. Coordination drawings.
 - 3. Staff names.
 - 4. Administrative and supervisory personnel.
 - 5. Project meetings.
- B. Related Sections:
 - 1. Section 01 30 00: Administrative requirements.
 - 2. Section 01 79 00: Demonstration and training.

1.2 COORDINATION

- A. Coordination: Coordinate construction operations included in various Specifications sections to ensure efficient and orderly installation of each part of Work.
 - 1. Coordinate construction operations that depend on each other for proper installation, connection, and operation.
 - 2. Coordinate work to assure efficient and orderly sequence of installation of construction elements.
 - 3. Make provisions for accommodating items installed by Owner or under separate contracts.
- B. Prepare memoranda for distribution to each party involved as needed, outlining special procedures required for coordination.
 - 1. Include required notices, reports, and list of attendees at meetings; include Architect and Owner in distribution.
- C. Verify characteristics of interrelated operating equipment are compatible; coordinate work having interdependent responsibilities for installing, connection to, and placing such equipment in service.

- D. Coordinate space requirements and installation of mechanical and electrical work indicated diagrammatically on Drawings.
 - 1. Follow routing shown for pipes, ducts, and conduits as closely as possible; make runs parallel with lines of building.
 - 2. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated; coordinate locations of fixtures and outlets with finish elements.
- F. Administrative Procedures: Coordinate scheduling and timing of administrative procedures with other construction activities and activities of other contractors to avoid conflicts and ensure orderly progress of Work.

1.3 SUBMITTALS

- A. Coordination Drawings: Prepare Coordination Drawings for areas where space availability is limited and necessitates maximum utilization of space for components and where separate entities, products, and materials require coordination.
 - 1. Require each subcontractor with items located in ceiling space to furnish coordination drawings of their items to assist in preparation of Contractor's Coordination Drawings.
 - 2. Indicate relationship of components shown on separate Shop Drawings.
 - 3. Indicate required installation sequences.
 - 4. Ceiling Spaces: Take special care to coordinate structure, ceiling systems, equipment located in ceiling spaces, fire protection systems, mechanical systems, and electrical systems.
- B. Staff Names: Immediately after receipt of notice to proceed or immediately after signing of Contract by Owner and Contractor, submit list of principal staff assignments, including superintendent and other personnel in attendance at Project site.
 - 1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone.

1.4 SUPERVISORY AND ADMINISTRATIVE PERSONNEL

- A. Provide supervisory personnel, in addition to Project Superintendent, as required for proper and timely performance of Work and coordination of subcontracts.
- B. Provide administrative staff as required to allow Project Superintendent and supervisory personnel to allocate maximum time to Project supervision and coordination.

1.5 PROJECT MEETINGS

- A. Schedule and administer Project meetings throughout progress of Work:

1. Pre-construction meeting.
 2. Progress meetings at weekly intervals.
 3. Pre-installation conferences.
 4. Coordination meetings.
 5. Special meetings.
- B. Make physical arrangements for meetings, prepare agenda with copies for participants, preside at meetings, record minutes and distribute copies within two days to Architect, Owner, participants, and those affected.
- C. Attendance: Job superintendent, major subcontractors and suppliers as appropriate to agenda; Architect, Owner, and Owner and Architect's consultants as appropriate to agenda topics for each meeting.
- D. Suggested Agenda: Review of Work progress, status of progress schedule and adjustments, delivery schedules, submittals, requests for information, maintenance of quality standards, pending changes and substitutions, and issues needing resolution.

END OF SECTION

SECTION 01329

CONSTRUCTION SCHEDULE - BAR CHART

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. References.
- B. Performance requirements.
- C. Qualifications.
- D. Quality Assurance.
- E. Project record documents.
- F. Submittals.
- G. Review and evaluation.
- H. Format.
- I. Cost and schedule reports.
- J. Early work schedule.
- K. Construction schedule.
- L. Short interval schedule.
- M. Requested time adjustment schedule.
- N. Recovery schedule.
- O. Updating schedules.
- P. Distribution.

1.2 REFERENCES

- A. Construction Planning and Scheduling Manual - A Manual for General Contractors and the Construction Industry, The Associated General Contractors of America (AGC).
- B. National Weather Service - Local Climatological Data.

1.3 PERFORMANCE REQUIREMENTS

- A. Ensure adequate scheduling during construction activities so work may be prosecuted in

an orderly and expeditious manner within stipulated Contract Time.

- B. Ensure coordination of Contractor and subcontractors at all levels.
- C. Ensure coordination of submittals, fabrication, delivery, erection, installation, and testing of materials and equipment.
- D. Ensure on-time delivery of Owner furnished materials and equipment.
- E. Ensure coordination of jurisdictional reviews.
- F. Assist in preparation and evaluation of applications for payment.
- G. Assist in monitoring progress of work.
- H. Assist in evaluation of proposed changes to Contract Time.
- I. Assist in evaluation of proposed changes to Construction Schedule.
- J. Assist in detection of schedule delays and identification of corrective actions.

1.4 QUALIFICATIONS

- A. Scheduler: Personnel with 3 years minimum experience in scheduling construction work of a complexity and size comparable to this Project.
- B. Administrative Personnel: 3 years minimum experience in using and monitoring schedules on comparable projects.

1.5 QUALITY ASSURANCE

- A. Perform work in accordance with Construction Planning and Scheduling Manual published by the AGC.
- B. In the event of discrepancy between the AGC publication and this section, provisions of this section shall govern.

1.6 PROJECT RECORD DOCUMENTS

- A. Submit record documents under provisions of Section 01 77 00.
- B. Submit one reproducible and two copies of final Record Construction Schedule which reflects actual construction of this Project.
- C. Record schedule shall be certified for compliance with actual way project was constructed.
- D. Receipt of Record Construction Schedule shall be a condition precedent to any retainage release or final payment.

1.7 SUBMITTALS

- A. Within 7 days from the Notice of Award submit proposed Early Work Schedule and preliminary Cost Report defining activities for first 60 days of Work.
- B. Within 45 days from the Notice of Award submit proposed Construction Schedule and final Cost Report.
- C. Submit updated Construction Schedule at least 10 days prior to each Application for Payment.
- D. Submit Short Interval Schedule at each Construction Progress Meeting.
- E. Submit Time Adjustment Schedule within 10 days of commencement of a claimed delay.
- F. Submit Recovery Schedules as required by completion of work.
- G. Submit one reproducible and two copies of each schedule and cost report.

1.8 REVIEW AND EVALUATION

- A. Early Work Schedule shall be reviewed during Preconstruction Conference with Owner and Architect.
- B. Within 5 days of receipt of Owner and Architect's comments provide satisfactory revision to Early Work Schedule or adequate justification for activities in question.
- C. Acceptance by Owner of corrected Early Work Schedule shall be a condition precedent to making any progress payments for first 60 days of Contract.
- D. Cost loaded values of Early Work Schedule shall be a basis for determining progress payments during first 60 days of Contract.
- E. Participate in joint review of Construction Schedule and Reports with Owner and Architect.
- F. Within 7 days of receipt of Owner and Architect's comments provide satisfactory revision to Construction Schedule or adequate justification for activities in question.
- G. In the event that an activity or element of work is not detected by Owner or Architect review, such omission or error shall be corrected by next scheduled update and shall not affect Contract Time.
- H. Acceptance by Owner of corrected Construction Schedule shall be a condition precedent to making any progress payments after first 60 days of Contract.
- I. Cost-loaded values of Construction Schedule shall be basis for determining progress payments.
- J. Review and acceptance by Owner and Architect of Early Work Schedule or Construction

Schedule does not constitute responsibility whatsoever for accuracy or feasibility of schedules nor does such acceptance expressly or impliedly warrant, acknowledge or admit reasonableness of activities, logic, duration, or cost loading stated or implied on schedules.

1.9 FORMAT

- A. Shall be fully developed horizontal bar-chart-type schedule prepared under concepts and methods outlined in AGC Construction Planning and Scheduling Manual.
- B. Provide separate bar for each activity or operation.
- C. Activity shall not have a duration longer than 14 days or a value over \$20,000.00 except non-construction activities for procurement and delivery.
- D. Prepare schedule on sheet of sufficient width to clearly show data.
- E. Provide continuous heavy vertical line identifying first day of week.
- F. Provide continuous subordinate vertical line identifying each day of week.
- G. Identify activities by number, description, and cost.
- H. Show each activity in proper sequence.
- I. Indicate graphically sequences necessary for related activities.
- J. Provide legend of symbols and abbreviations used.

1.10 COST AND SCHEDULE REPORTS

- A. Activity Analysis: Tabulate each activity and identify for each activity:
 - 1. Description.
 - 2. Interface with outside contractors or agencies.
 - 3. Duration.
 - 4. Start date.
 - 5. Finish date.
 - 6. Actual start date.
 - 7. Actual finish date.
 - 8. Monetary value keyed to Schedule of Values.
 - 9. Responsibility.

10. Percentage complete.
 11. Variance positive or negative.
- B. Cost Report: Tabulate each activity and identify for each activity:
1. Description.
 2. Total cost.
 3. Percentage complete.
 4. Value prior to current period.
 5. Value this period.
 6. Value to date.

1.11 EARLY WORK SCHEDULE

- A. Shall establish scope of work to be performed during the first 60 days of Contract.
- B. Shall contain the following phases and activities:
1. Procurement activities to include mobilization, shop drawings and sample submittals.
 2. Identification of key and long-lead elements and realistic delivery dates.
 3. Construction activities in units of whole days limited to 14 days for each activity except non-construction activities for procurement and delivery.
 4. Approximate cost and duration of each activity.
- C. Shall contain seasonal weather considerations. Seasonal rainfall shall be 10 year average for the month as evidenced by Local Climatological Data obtained from U.S. National Weather Service.
- D. Activities shall be incorporated into Construction Schedule.
- E. No application for payment will be evaluated or processed until Early Work Schedule has been submitted and reviewed.
- F. Shall be updated on a monthly basis while Construction Schedule is being developed.
- G. Failure to submit an adequate or accurate Early Work Schedule or failure to submit on established dates will be considered a substantial breach of Contract.

1.12 CONSTRUCTION SCHEDULE

- A. Shall include Early Work Schedule as first 60 days of Construction Schedule.

- B. Shall be a fully developed horizontal bar-chart-type schedule.
- C. Shall indicate a completion date for project that is no later than required completion date.
- D. Conform to mandatory dates specified in the contract documents.
- E. Should schedule indicate a completion date earlier than any required completion date, Owner or Architect shall not be liable for any costs should project be unable to be completed by such date.
- F. Seasonal weather shall be considered in planning and scheduling of all work. Seasonal rainfall shall be 10 year average for the month as evidenced by Local Climatological Data obtained from U.S. National Weather Service.
- G. Provide sub-schedules to define critical portions of entire schedule.
- H. Indicate procurement activities, delivery and installation of Owner furnished material and equipment.
- I. Level of detail shall correspond to complexity of work involved.
- J. As developed shall show sequence of activities required for complete performance of Work.
- K. Shall be logical and show a coordinated plan of Work.
- L. Show order of activities. Include specific dates of completion.
- M. Duration of activities shall be coordinated with subcontractors and suppliers and shall be best estimate of time required.
- N. Failure to include any activity shall not be an excuse for completing all work by required completion date.
- O. An activity shall meet the following criteria:
 - 1. Any portion or element of work, action, or reaction that is precisely described, readily identifiable, and is a function of a logical sequential process.
 - 2. Descriptions shall be clear and concise. Beginning and end shall be readily verifiable. Starts and finishes shall be scheduled by logical restraints.
 - 3. Responsibility shall be identified with a single performing entity.
 - 4. Additional codes shall identify building, floor, bid item and CSI classification.
 - 5. Assigned dollar value (cost-loading) of each activity shall cumulatively equal total contract amount. Mobilization, bond and insurance costs shall be separate. General requirement costs, overhead, profit, shall be prorated throughout all activities. Activity costs shall correlate with Schedule of Values.

- P. For major equipment and materials show a sequence of activities including:
1. Preparation of shop drawings and sample submissions.
 2. Review of shop drawings and samples.
 3. Finish and color selection.
 4. Fabrication and delivery.
 5. Erection or installation.
 6. Testing.
- Q. Include a minimum of 15 days prior to completion date for punch lists and clean up. No other activities shall be scheduled during this period.

1.13 SHORT INTERVAL SCHEDULE

- A. Shall be fully developed horizontal bar-chart-type schedule directly derived from Construction Schedule.
- B. Prepare schedule on sheet of sufficient width to clearly show data.
- C. Identify activities by same description as Construction Schedule.
- D. Show each activity in proper sequence.
- E. Indicate graphically sequences necessary for related activities.
- F. Indicate activities completed or in progress for previous 2 week period.
- G. Indicate activities scheduled for succeeding 2 week period.
- H. Further detail may be added if necessary to monitor schedule.

1.14 REQUESTED TIME ADJUSTMENT SCHEDULE

- A. Updated Construction Schedule shall not show a completion date later than the Contract Time, subject to any time extensions processed as part of a Change Order.
- B. If an extension of time is requested a separate schedule entitled "Requested Time Adjustment Schedule" shall be submitted to Owner and Architect.
- C. Indicate requested adjustments in Contract Time which are due to changes or delays in completion of work.
- D. Extension request shall include forecast of project completion date and actual achievement of any dates listed in Agreement.
- E. To the extent that any requests are pending at time of any Construction Schedule

update, Time Adjustment Schedule shall also be updated.

- F. Schedule shall be a fully developed horizontal bar-chart-type schedule.
- G. Accompany schedule with formal written time extension request and detailed impact analysis justifying extension.
- H. Time impact analysis shall demonstrate time impact based upon date of delay, and status of construction at that time.
- I. Activity delays shall not automatically constitute an extension of Contract Time.
- J. Failure of subcontractors shall not be justification for an extension of time.
- K. Extensions will be granted only to extent that time adjustments extend Contract completion date.
- L. Owner shall not have an obligation to consider any time extension request unless requirements of Contract Documents, and specifically, but not limited to these requirements are complied with.
- M. Owner shall not be responsible or liable for any construction acceleration due to failure of Owner to grant time extensions under Contract Documents should requested adjustments in Contract Time not substantially comply with submission and justification requirements of Contract for time extension requests.
- N. In the event a Requested Time Adjustment Schedule and Time Impact Analysis are not submitted within 10 days after commencement of a delay it is mutually agreed that delay does not require a Contract time extension.

1.15 RECOVERY SCHEDULE

- A. When activities are behind Construction Schedule a supplementary Recovery Schedule shall be submitted.
- B. Form and detail shall be sufficient to explain and display how activities will be rescheduled to regain compliance with Construction Schedule.
- C. Maximum duration shall be one month and shall coincide with payment period.
- D. Ten days prior to expiration of Recovery Schedule verification to determine if activities have regained compliance with Construction Schedule will be made. Based upon this verification the following will occur:
 - 1. Supplemental Recovery Schedule will be submitted to address subsequent payment period.
 - 2. Construction Schedule will be resumed.

1.16 UPDATING SCHEDULES

- A. Review and update schedule at least 10 days prior to submitting an Application for Payment.
- B. Approved change orders which affect schedule shall be identified as separate new activities.
- C. Change orders of less than \$20,000.00 value or less than 3 days duration need not be shown unless completion date is affected.
- D. Maintain schedule to record actual prosecution and progress.
- E. No other revisions shall be made to schedule unless authorized by Owner.
- F. Provide narrative Progress Report at time of schedule update which details the following:
 - 1. Activities or portions of activities completed during previous reporting period.
 - 2. Actual start dates for activities currently in progress.
 - 3. List of major construction equipment used during reporting period and any equipment idle.
 - 4. Number of personnel by craft engaged on Work during reporting period.
 - 5. Progress analysis describing problem areas.
 - 6. Current and anticipated delay factors and their impact.
 - 7. Proposed corrective actions for Recovery Schedule.
 - 8. Proposed modifications, additions, deletions and changes in Construction Schedule.
- G. Schedule update will form basis upon which progress payments will be made.
- H. Owner will not be obligated to review or process Application for Payment until schedule and Progress Report have been submitted.

1.17 DISTRIBUTION

- A. Following joint review and acceptance of updated schedules distribute copies to Owner, Architect, and all other concerned parties.
- B. Instruct recipients to promptly report in writing any problem anticipated by projections shown in schedule.

END OF SECTION

SECTION 01 35 15

CALGREEN ENVIRONMENTAL REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Comply with CALGreen environmental requirements related to energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental quality.
 - 1. Comply with specific CALGreen requirements as adopted by authorities having jurisdiction and applicable to Project.

1.2 ENVIRONMENTAL REQUIREMENTS

- A. Mandatory Measures: Comply with CALGreen Mandatory Measures applicable to Project.
 - 1. Design team and construction team are each required to participate to maximum degree possible to achieve CALGreen environmental requirements.
 - 2. Contract Documents are not intended to limit alternative means of achieving environmental requirements.
 - a. Suggestions from Contractor, subcontractors, suppliers, and manufacturers for achieving environmental requirements are encouraged; team approach is also encouraged.
 - 3. Voluntary Tiers: Verify extent of Voluntary Tiers applicability to Project.
 - a. Construction team is encouraged to work with Owner and Design Team to incorporate additional measures as defined in CALGreen Appendixes.
 - b. Contact Owner and Architect regarding extent of intent of Project to reach Voluntary Tiers, additional work necessary to achieve enhanced Voluntary Tiers, and potential costs involved in achieving each Voluntary Tier.
 - c. Construction team is required to achieve Mandatory Measures and Voluntary Tiers as applicable, and to achieve as much as possible without unacceptable cost impact or schedule impact as determined by Owner.
- B. Requirements: Construction team is required to review CALGreen requirements relative to Project related to following.
 - 1. Energy Efficiency: Comply with California Energy Commission requirements.
 - 2. Water Efficiency and Conservation: Comply with requirements for both indoor and outdoor water use.
 - 3. Material Conservation and Resource Efficiency:

- a. Nonresidential Projects: Provide weather-resistant exterior wall and foundation envelope including prevention of landscape irrigation spray on structures (if any) and prevent water intrusion at exterior entries.
 - b. Residential Projects: Seal openings and penetrations in building envelope
Construction Waste:
 - c. Provide construction waste management plan as defined by CALGreen with demolition and construction waste diverted from landfill by recycling or salvage for reuse.
 - d. Nonresidential Projects Building Maintenance and Operation: Provide for commissioning requirements as required by CALGreen including but not limited to testing, documentation and training, testing and adjusting.
 - e. Residential Projects Building Maintenance and Operation: Provide operation and maintenance data as required by CALGreen.
4. Nonresidential Projects Environmental Quality: Comply with following as adopted by authorities having jurisdiction and as applicable to Project.
- a. Fireplaces: Comply with requirement for fireplaces (if any) to be direct-vent sealed-combustion gas type or sealed wood-burning fireplace, woodstove, or pellet stove.
 - b. Mechanical Equipment Pollution Control: Cover duct and related air distribution component openings to prevent dust and debris accumulation.
 - c. Finish Material Pollution Control: Comply with CALGreen requirements for volatile organic compound (VOC) emissions including but not necessarily limited to following (as applicable):
 - 1) Adhesives, sealants and caulks.
 - 2) Paints and coatings.
 - 3) Carpet systems including carpet, carpet cushion, and adhesives.
 - 4) Resilient flooring systems.
 - 5) Composite wood products formaldehyde limitations.
 - d. Filters: Comply with requirements for mechanically ventilated buildings to have air filtration media for outside and return air prior to occupancy.
 - e. Environmental Tobacco Smoke (ETS) Control: Comply with CALGreen requirements for ETS.
 - f. Interior Moisture Control: Comply with California Building Code requirements and CALGreen requirements for vapor retarder at concrete slab foundations and capillary break (aggregate base).
 - g. Building Material Moisture Content: Do not use water damaged building materials, remove and place wet and high moisture content insulation, and do not enclose wall or floor framing when moisture content exceeds 19%.

- h. Indoor Air Quality: Comply with CALGreen requirements for outside air delivery and carbon dioxide monitoring.
 - i. Environmental Comfort: Comply with CALGreen requirements for whole acoustical control and interior sound control.
 - j. Outdoor Air Quality: Comply with CALGreen requirements for reduction of greenhouse gases and ozone depletion.
- 5. Residential Projects Environmental Quality:
 - a. Fireplaces: Comply with requirement that gas fireplaces (if any) shall be direct-vent sealed-combustion type and woodstoves or pellet stoves (if any) comply with U.S. EPA Phase II emissions limits.
 - b. Mechanical Equipment Pollution Control: Cover duct and related air distribution component openings to prevent dust and debris accumulation.
 - c. Finish Material Pollution Control: Comply with CALGreen requirements for volatile organic compound (VOC) emissions including but not necessarily limited to following (as applicable):
 - 1) Adhesives, sealants and caulks.
 - 2) Paints and coatings.
 - 3) Carpet systems including carpet, carpet cushion, and adhesives.
 - 4) Resilient flooring systems.
 - 5) Composite wood products formaldehyde limitations.
 - d. Interior Moisture Control: Comply with CALGreen requirements for vapor retarder at concrete slab foundations and capillary break (aggregate base).
 - e. Building Material Moisture Content: Do not use water damaged building materials, remove and place wet and high moisture content insulation, and do not enclose wall or floor framing when moisture content exceeds 19%.
 - f. Indoor Air Quality: Provide humidistat-controlled bathroom exhaust fans with Energy Star compliance, ducted to terminate outside building.
 - g. Environmental Comfort: Comply with CALGreen requirements for whole house exhaust fan louvers to be insulated or have covers which close when fan is off, and with heating and air-conditioning system design requirements.
- C. Planning and Design: Construction team shall coordinate with Design Team regarding Project Planning and Design methods related to CALGreen requirements related to Project design and shall comply with requirements related to construction.

1.3 QUALITY ASSURANCE

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

1. Experience: Environmental project manager to have experience relating to CALGreen building construction.
 2. Responsibilities: Carefully review Contract Documents for CALGreen issues, coordinate work of trades, subcontractors, and suppliers; instruct workers relating to environmental issues; and oversee Project Environmental Goals.
 - a. Submittals: Collect, compile, verify, and maintain sufficient information for submittals indicating compliance with applicable CALGreen requirements.
 3. Meetings: Discuss CALGreen Goals at following meetings.
 - a. Pre-construction meeting.
 - b. Pre-installation meetings.
 - c. Regularly scheduled job-site meetings.
- B. CALGreen Issues Criteria: Comply with requirements listed in CALGreen and various Specification sections.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General Issues: Do not use materials with moisture stains or with signs of mold or mildew.
1. Moisture Stains: Materials that have evidence of moisture damage, including stains, are not acceptable, including both stored and installed materials; immediately remove from site.
 2. Mold and Mildew: Materials that have evidence of growth of molds or of mildew are not acceptable, including both stored and installed materials; immediately remove from site.

2.2 SUBSTITUTIONS

- A. Substitutions Environmental Issues: Requests for substitutions shall comply with requirements specified in Section 01 25 00 – Substitution Procedures, with following additional information required where environmental issues are involved.
1. Indicate each proposed substitution complies with CALGreen requirements.
 2. Owner and Architect reserve right to reject proposed substitutions where CALGreen information is not provided and where substitution may impact mandatory requirements or Project voluntary tier requirements.

PART 3 - EXECUTION

3.1 PROTECTION

- A. Environmental Issues: Protect interior materials from water damage; where interior products not intended for wet applications are exposed to moisture, immediately remove from site.
 - 1. Protect installed products using methods that do not support growth of molds and mildews. Immediately remove from site materials with mold and materials with mildew.

END OF SECTION

SECTION 01 40 00

QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This section describes general quality control requirements.
 - 1. General quality control.
 - 2. Manufacturers' field services.
 - 3. Mock-ups.
 - 4. Independent testing laboratory services and inspections.
- B. Related Requirements:
 - 1. Refer to applicable codes and Specifications sections for test requirements.

1.2 QUALITY CONTROL, GENERAL

- A. Maintain quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.

1.3 MANUFACTURER'S FIELD SERVICES

- A. When specified in respective Specification sections, require manufacturer or supplier to have qualified personnel provide on-site observations and recommendations.
 - 1. Observe field conditions, including conditions of surfaces and installation.
 - 2. Observe quality of workmanship.
 - 3. Provide recommendations to assure acceptable installation and workmanship.
 - 4. Where required, start, test, and adjust equipment as applicable.
- B. Representative shall submit written report to Architect or Owner listing observations and recommendations.

1.4 MOCK-UPS

- A. Erect field samples and field mock-ups at locations on site as approved in advance and in accordance with requirements where included in Specifications section.
 - 1. Test mock-ups requiring special equipment may be erected at location having access to necessary equipment; coordinate with Architect.
- B. Field samples and mock-ups not approved and not capable of being acceptably revised shall be removed from site.
- C. Approved field samples and mock-ups may be used as part of Project.

1.5 TESTING LABORATORY SERVICES AND INSPECTIONS

- A. Testing laboratory services and inspections specified and required by applicable codes and regulations will be performed by firms independent of firms related to construction operations and shall be acceptable to applicable authorities.
 - 1. Notify Owner immediately where potential conflict of interest may be involved with testing laboratories or inspection services for Project.
 - 2. Owner or Architect may also require independent testing of items where doubts exist that product or system does not conform to Contract Documents.
 - 3. Owner will employ and pay for testing laboratory and special inspectors to provide Project specific testing and inspections under applicable codes and Specification sections except where indicated otherwise.
 - a. Owner employment of testing laboratory and inspectors shall not relieve Contractor of obligation to perform Work in accordance with requirements of applicable codes and Contract Documents.
 - 1) Laboratory and inspectors may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 - b. Retesting required because of non-conformance to specified requirements shall be performed by Owner's testing laboratory.
 - 1) Payment for retesting shall be charged to Contractor by deducting inspection and testing charges from Contract amount.
 - c. Owner provided testing shall be limited to Project specific testing and shall not include general tests or approvals of materials, equipment or systems.
 - d. Owner provided inspections shall be limited to Project design team inspections and special inspectors required by applicable authorities.
- B. Services shall be performed in accordance with requirements of governing authorities and with specified standards.
- C. DSA Projects: Testing and inspections shall be performed in accordance with DSA 103 Form.
- D. Reports will be submitted to Architect in duplicate giving observations and results of tests and inspections, indicating compliance or non-compliance with specified standards and with Contract Documents.
 - 1. Where required, testing laboratory and inspectors will submit copy of tests and inspections directly to enforcing agency.

- E. Contractor shall cooperate with testing laboratory and inspection personnel; furnish tools, samples of materials, design mix, equipment, storage and assistance as requested.
- 1. Notify Owner, Architect, inspectors, and testing laboratory sufficiently in advance of expected time for operations requiring inspection and testing services.

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

- A. This section describes temporary construction facilities and temporary controls.
 - 1. Electricity and lighting.
 - 2. Heat and ventilation.
 - 3. Water and sanitary facilities.
 - 4. Construction aids.
 - 5. Temporary enclosures.
 - 6. Barriers.
 - 7. Cleaning during construction.
 - 8. Project identification.
 - 9. Field offices.
 - 10. Cellular telephone service.
 - 11. Storage.
- B. Related Requirements:
 - 1. Section 01 70 00: Progress cleaning and final cleaning.
 - 2. Section 01 74 10: Waste management.
- C. Provide temporary construction facilities and temporary controls as required to conform to applicable authorities and as required to complete Project in accordance with Contract Documents.
 - 1. Authorities: Contact governing authorities to establish extent of temporary facilities and temporary controls required by authorities.

1.2 ELECTRICITY AND LIGHTING

- A. Provide electrical service required for construction operations, with branch wiring and distribution boxes located to allow service and lighting by means of construction-type power cords.
 - 1. Connection to existing electrical service is permitted.
- B. Provide lighting for construction operations.
 - 1. Permanent lighting may be used during construction; maintain lighting and make routine repairs.
- C. Owner will pay costs of energy used from existing on-site services.

1.3 HEAT AND VENTILATION

- A. Provide heat and ventilation as required to maintain specified conditions for construction operation, to protect materials and finishes from damage due to temperature and humidity.
- B. Owner will pay costs of energy used from existing on-site services.

1.4 WATER AND SANITARY FACILITIES

- A. Provide water service required for construction operations; extend branch piping with outlets located so water is available by use of hoses.
 - 1. Connection to existing facilities is permitted.
 - 2. Owner will pay for water used from existing on-site services.
- B. Provide and maintain required sanitary facilities and enclosures.

1.5 CONSTRUCTION AIDS

- A. Noise, Dust and Pollution Control: Provide materials and equipment necessary to comply with local requirements for noise, dust and pollution control.
- B. Fire Protection: Maintain on-site fire protection facilities as required by applicable authorities and insurance requirements.
- C. Security: Protect Site and Work; prevent unauthorized entry, vandalism, and theft.
 - 1. Coordinate with Owner's security program.
- D. Dewatering: Provide and operate drainage and pumping equipment; maintain excavations and site free of standing water.

1.6 ENCLOSURES

- A. Temporary Closures: Provide temporary weather-tight closures for exterior openings for acceptable working conditions, for protection for materials, to protect interior materials from dampness, for temporary heating, and to prevent unauthorized entry.
 - 1. Provide doors with self-closing hardware and locks.
- B. Temporary Partitions: Provide temporary partitions as required to separate work areas from completed areas, to prevent penetration of dust and moisture into completed areas, and to prevent damage to finished areas and installed equipment.
 - 1. Construction: Framing and sheet materials with closed joints and sealed edges at intersections with existing surfaces; Flame Spread Rating of 25 in accordance with ASTM E84.

1.7 BARRIERS

- A. Barriers: Provide barriers as required to prevent public entry to construction areas and to protect adjacent properties from damage from construction operations.
 - 1. Fence: Provide minimum 8-foot high commercial grade chain link or painted solid wood fence around construction site; equip with gates with locks.
 - 2. Covered Walkways: Provide lighted covered painted walkways as required by governing authorities for public rights-of-way and for public access to existing building.
- B. Barricades: Provide barricades as required by governing authorities.
- C. Tree Protection: Provide barriers around trees and plants designated to remain; protect against vehicular traffic, stored materials, dumping, chemically injurious materials, and puddling or continuous running water.

1.8 CLEANING DURING CONSTRUCTION

- A. Control accumulation of waste materials and rubbish; recycle or dispose of off-site.
- B. Clean interior areas prior to start of finish work, maintain areas free of dust and other contaminants during finishing operations.

1.9 PROJECT IDENTIFICATION

- A. Project Sign: Provide minimum 32-square foot Project identification sign of wood frame and exterior grade plywood construction, painted, with computer generated graphics by professional sign maker.
 - 1. Design: As furnished by Architect.
 - 2. Submit to Owner and Architect additional names or changes proposed to Project sign for prior written approval.
 - 3. Erect on site at location established by Architect.
- B. Other Signs: Subject to approval of Architect and Owner.

1.10 FIELD OFFICES

- A. Field Office: Provide weather-tight field office, with lighting, electrical outlets, data outlets, heating, and ventilating equipment, and equipped with furniture.
 - 1. Meeting Space: In addition, provide space for Project meetings with table and chairs to accommodate minimum six persons.
 - 2. Telephone Service: Provide telephone service to field office.

3. Multi-Purpose Copier: Provide plain paper multi-purpose color and black-and-white copier with enlargement and reduction capability and with built-in printer, scanner, and facsimile capabilities.

1.11 CELLULAR TELEPHONE SERVICE

- A. Cellular Telephone Service: Furnish on-site Project Managers with cellular telephone. Ensure Owner and Architect ability to contact site during construction operations.
 1. Schedules: Submit schedules of on-site Project Managers with individual cellular telephone numbers to Owner and Architect; maintain schedules and cell phone numbers up to date during Project on-site operations.

1.12 STORAGE

- A. Storage for Tools, Materials, and Equipment: Limit on-site storage to Project area; provide weather-tight storage, with heat and ventilation for products requiring controlled conditions.
 1. Maintain adequate space for organized storage and access.
 2. Provide lighting for inspection of stored materials.

1.13 REMOVAL

- A. Remove temporary materials, equipment, services, and construction prior to Substantial Completion Inspection.
- B. Clean and repair damage caused by installation or use of temporary facilities.
- C. Restore existing facilities used during construction to specified or original condition.

END OF SECTION

SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. This section describes basic product requirements governing material and equipment.

1. General product requirements.
2. Product list.
3. Quality assurance.
4. Delivery, storage, and handling.

B. Related Requirements:

1. Section 01 25 00: Substitution procedures.
2. Section 01 30 00: Submittal of manufacturers' certificates.
3. Section 01 77 00: Operation and maintenance data.

1.2 GENERAL PRODUCTS REQUIREMENTS

A. Products include material, equipment, and systems.

B. Comply with Specifications, referenced standards, and applicable codes and regulations as minimum requirements.

C. Provide new materials except as specifically allowed by Contract Documents.

D. Materials to be supplied in quantity within a Specification section shall be by one manufacturer, shall be the same, and shall be interchangeable.

E. Provide equipment and systems composed of materials from a single manufacturer except where otherwise recommended by equipment or systems manufacturer or where otherwise indicated in Contract Documents.

F. Contractor's Options: Comply with following options; requests for substitutions for named manufacturers and products shall comply with requirements specified in Section 01 25 00 – Substitution Procedures.

1. Products Identified by Reference Standards: Select product meeting referenced standard for products specified only by reference standard.

a. Requests for Substitutions to be limited to products not complying with referenced standards.

- 1) Submit justification for non-compliance with reference standards as part of Request for Substitutions; if product is foreign made submit rationale why foreign standards and basic materials indicates compliance.

2. Named Manufacturers: Where names of manufacturers are specified select any named manufacturer product meeting Specifications for products specified by naming one or more manufacturers.
 - a. Submit Request for Substitution for any manufacturer not named.
3. Named Manufacturers and Named Products: Select any named manufacturer named product meeting Specifications for products specified by naming one or more manufacturers and products.
 - a. Where only one manufacturer and product is named together with additional manufacturers without specific products, Requests for Substitutions to be limited to products not comparable to that specified.
 - 1) Contractors, subcontractors, suppliers, and manufacturers shall take special care to ensure comparable products are being supplied based on design, performance, quality, and longevity.
 - 2) Substitutions: Submit Request for Substitution for any manufacturer not named and for products not comparable to those specified in design, performance, quality, and longevity.
4. Basis of Design: Where manufacturer or manufacturer and product both are indicated as Basis of Design, submit Request for Substitution for other manufacturers and products.
5. "Or Equal" Clauses: Submit request for substitution for manufacturer or product not specifically named in Specifications where terms "or equal", "or approved equal", or similar references are made.

G. Nameplates: Do not attach or imprint manufacturer or producer nameplates on exposed surfaces in occupied spaces except for required labels and operating data.

1. Equipment Nameplates: Provide permanent nameplate on service connected and power operated equipment located on easily accessible surface inconspicuous in occupied spaces.
 - a. Provide name of product and manufacturer, model and serial number, capacity, speed, rating, and similar information.

1.3 SUBMITTALS

- A. Product List: Within 35 days after award of Contract, submit to Owner and Architect a complete list of major products proposed for installation, with name of manufacturer, trade name, and model.
- B. Product List: Prior to submittal of second Request for Payment, submit to Architect complete list of major products which are proposed for installation, with name of manufacturer, trade name, and model.

1. Tabulate products by Specification number and title.

C. Substitutions: Refer to Section 01 25 00 – Substitution Procedures.

1.4 QUALITY ASSURANCE

A. Comply with industry standards and applicable codes except when more restrictive tolerances or requirements indicate more rigid standards or precise workmanship.

B. Perform work by persons qualified to produce workmanship of specified quality.

C. Install products straight, true-to-line, and in correct relationship to adjacent materials, with hairline joints, free of rough, sharp and potentially hazardous edges.

D. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.

1. Seismic Anchors: Conform to code requirements.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Transport products by methods to avoid product damage, deliver in undamaged condition in manufacturer's unopened containers or packaging.

B. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible.

C. Store sensitive products in weather-tight enclosures; maintain within temperature and humidity ranges required by manufacturer's instructions.

D. For exterior storage of fabricated products, place on sloped supports above ground.

E. Store loose granular materials on solid surfaces in a well-drained area; prevent mixing with foreign matter.

F. Arrange storage to provide access for inspection; periodically inspect to assure products are undamaged and are maintained under required conditions.

G. Provide equipment and personnel to handle products by methods to prevent soiling and prevent damage.

H. Promptly inspect shipments to assure products comply with requirements, quantities are correct, and products are undamaged.

I. Immediately remove from Project products damaged, wet, stained, and products with mold and products with mildew.

1. Take special care to prevent absorbent products such as gypsum board and acoustical ceiling units from becoming wet.

END OF SECTION

SECTION 01 70 00

EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This section describes execution requirements.
 - 1. Installer qualifications.
 - 2. Examination.
 - 3. Manufacturer's instructions.
 - 4. Installation.
 - 5. Cleaning.
 - 6. Protection.
- B. Related Requirements:
 - 1. Section 01 50 00: Cleaning during construction.
 - 2. Section 01 77 00: Closeout procedures.
 - 3. Section 01 79 00: Demonstration and training.

1.2 INSTALLER QUALIFICATIONS

- A. Experienced Installers: Installers to have minimum five-years successful experience installing items like those required for Project, except for individuals in training under direct supervision of experienced installer.

1.3 EXAMINATION

- A. Acceptance of Conditions: Beginning installation of a product signifies installer has examined substrates, areas, and conditions for compliance with manufacturer requirements for tolerances and other conditions affecting performance.
- B. Field Measurements: Take field measurements as required to fit Work properly; recheck measurements prior to installing each product.
 - 1. Where portions of Work are to fit to other construction verify dimensions of other construction by field measurements before fabrication; allow for cutting and patching to avoid delaying Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

1.4 MANUFACTURERS' INSTRUCTIONS

- A. Manufacturer's Recommendations: When work is specified to comply with manufacturers' recommendations or instructions, distribute copies to persons involved and maintain one set in field office.
 - 1. Conform to requirements specified in Section 01 30 00 for submittal of recommendations or instructions to Architect; submit to Architect only where specified or where specifically requested; otherwise keep in Field Office.
- B. Perform work in accordance with details of recommendations and instructions and specified requirements.
 - 1. Should a conflict exist between Specifications and recommendations or instructions consult with Architect.
- C. Where manufacturer's information notes special recommendations in addition to installation instructions, comply with both recommendations and instructions.

1.5 INSTALLATION

- A. Pre-Installation Meetings: Installers and suppliers are to attend pre-installation meetings scheduled by Contractor.
- B. Comply with manufacturers written recommendations and installation instructions unless more restrictive requirements are specified.
- C. Locate Work and components accurately, in correct alignment and elevation.
 - 1. Make vertical work plumb and horizontal work level.
 - 2. Install components to allow space for maintenance and ease of removal for replacement.
- D. Install products at time and under conditions to ensure best possible results; maintain conditions required for product performance until Substantial Completion.
- E. Conduct operations so no part of Work is subject to damaging operations or excessive loads during normal conditions.
- F. Securely anchor permanent construction in place, accurately located and aligned with other portions of Work.
- G. Allow for building movement including thermal expansion and contraction.
- H. Make joints of uniform width; arrange joints as indicated, for best visual effect where not otherwise indicated; fit exposed connections together to form hairline joints except where otherwise indicated.

1.6 CLEANING

- A. Cleaning During Construction: Specified in Section 01 50 00 - Temporary Facilities and Controls.
- B. Progress Cleaning: Keep installed areas clean using cleaning materials specifically recommended by manufacturers of product being cleaned; where not otherwise recommended use nontoxic materials that will not damage surfaces.
 - 1. Remove debris from concealed spaces before enclosing space.
 - 2. Supervise construction operations to assure no part of construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during construction period.
- C. Final Cleaning: Execute final cleaning at Substantial Completion.
 - 1. Clean interior and exterior surfaces exposed to view; remove temporary labels, stains and foreign substances; polish transparent and glossy surfaces; vacuum carpeted and soft surfaces.
 - a. Vacuuming Equipment: Type with high efficiency particulate arrestor (HEPA) type filters; properly maintained.
 - 2. Clean equipment and fixtures to a sanitary condition, clean filters of mechanical equipment, replace filters where cleaning is impractical.
 - a. Clean ducts.
 - 3. Clean site; sweep paved areas.
 - 4. Remove waste, surplus materials and rubbish from Project and site; recycle to maximum extent feasible.

1.7 PROTECTION

- A. Protect products subject to deterioration with impervious cover. Provide ventilation to avoid condensation and trapping water.
- B. Take care to use protective covering and blocking materials that do not soil, stain, or damage materials being protected.
- C. After installation, provide coverings to protect products from damage from traffic and construction operations, remove when no longer needed.
- D. Protect interior materials from water damage; immediately remove wet materials from site to prevent growth of mold and mildew on site.

END OF SECTION

SECTION 01 73 00

CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SUMMARY

- A. Contractor is responsible for cutting, fitting and patching to complete Work and to:
 - 1. Make its parts fit together properly.
 - 2. Uncover work to provide for installation of ill-timed work.
 - 3. Remove and replace defective work.
 - 4. Remove and replace work not conforming to Contract Documents.
 - 5. Remove samples of installed work as required for testing.
 - 6. Provide routine penetrations of non-structural surfaces for installation of piping.
 - 7. Provide routine penetrations of non-structural surfaces for installation of conduit.
- B. Related Requirements:
 - 1. Section 01 50 00: Temporary facilities and controls.
 - 2. Section 02 41 00: Structure demolition.
 - 3. Section 02 41 20: Selective building demolition for remodeling.

1.2 SUBMITTALS

- A. Submit written request well in advance of cutting or alteration which affects:
 - 1. Work of Owner or separate contractor.
 - 2. Structural value or integrity of any element of Project.
 - 3. Integrity of weather-exposed or moisture-resistant elements.
 - 4. Efficiency, operational life, maintenance or safety of operational elements.
 - 5. Visual qualities of sight-exposed elements.
- B. Request shall include:
 - 1. Identification of Project and description of affected work.
 - 2. Necessity for cutting or alteration.
 - 3. Effect on work of Owner or separate contractor.
 - 4. Effect on structural integrity, or weatherproof integrity of Project.
 - 5. Alternatives to cutting and patching.
 - 6. Cost proposal, when applicable.
 - 7. Written permission of separate contractor whose work will be affected.
 - 8. Description of proposed work including:
 - a. Scope of cutting, patching, alteration, or excavation.
 - b. Products proposed to be used.
 - c. Extent of refinishing to be included.
- C. Should conditions of Work or schedule indicate a change of products from original installation, Contractor shall submit request for substitution as specified in Section 01 25 00 – Substitution Procedures.

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

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Comply with Specifications and standards for each specific product involved.
- B. Where Specifications and standards have not been provided, provide materials and fabrication consistent with quality of Project and intended for commercial construction.
- C. Provide new materials for cutting and patching unless otherwise indicated.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Inspect existing conditions of Project, including elements subject to damage or to movement during cutting and patching.
- B. After uncovering work, inspect conditions affecting installation of products, or performance of work.
- C. Report unsatisfactory or questionable conditions to Architect in writing; do not proceed with work until Architect has provided further instructions.

3.2 PREPARATION

- A. Provide adequate temporary support as necessary to assure structural value or integrity of affected portion of Work.
 - 1. Provide services of licensed engineer for designing temporary support where required by applicable authorities for temporary supports and for shoring; submit engineering calculations directly to applicable authorities upon request.
- B. Protect other portions of Project from damage.

3.3 PERFORMANCE

- A. Execute cutting by methods that provide proper surfaces to receive installation of repairs and finishes.
 - 1. Execute excavating and backfilling by methods which will prevent settlement, and which will prevent damage to other work.
- B. Employ same installer or fabricator to perform cutting and patching work as employed for new construction for:
 - 1. Weather-exposed or moisture resistant elements.
 - 2. Sight-exposed finished surfaces.

- C. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances and finishes.
- D. Restore work that has been cut or removed; install new products to provide completed Work in accordance with requirements of Contract Documents.
- E. Fit work tight to pipes, sleeves, ducts, conduit and penetrations through surfaces.
- F. Refinish entire surfaces as necessary to provide even finish to match adjacent finishes:
 - 1. For continuous surfaces, refinish to nearest intersection.
 - 2. For an assembly, refinish entire unit.

END OF SECTION

SECTION 01 74 10

WASTE MANAGEMENT

PART 1 - GENERAL

1.1 SUMMARY

- A. Project requires special Waste Management Program.
 - 1. CALGreen Waste Management: As required in Section 01 35 15.
 - 2. Provide itemization of costs related to Waste Management Program.
 - 3. Effect optimum control of solid wastes.
 - 4. Prevent environmental pollution and damage.
- B. Related Work:
 - 1. Section 01 35 15: CALGreen environmental requirements.
 - 2. Section 01 50 00: Temporary facilities and controls.

1.2 DEFINITIONS

- A. Inert Fill: A permitted facility that accepts inert waste such as asphalt and concrete exclusively.
- B. Class III Landfill: A landfill that accepts non-hazardous waste such as household, commercial, and industrial waste, including construction, remodeling, repair, and demolition operations.
- C. Construction and Demolition Waste: Includes solid wastes, such as building materials, packaging, rubbish, debris, and rubble resulting from construction, remodeling, repair, and demolition operations.
 - 1. Rubbish: Includes both combustible and noncombustible wastes, such as paper, boxes, glass, crockery, metal and lumber scrap, tin cans, and bones.
 - 2. Debris: Includes both combustible and noncombustible wastes, such as leaves and tree trimmings that result from construction or maintenance and repair work.
- D. Chemical Waste: Includes petroleum products, bituminous materials, salts, acids, alkalis, herbicides, pesticides, organic chemicals and inorganic wastes.
- E. Sanitary Wastes:
 - 1. Garbage: Refuse and scraps resulting from preparation, cooking, distribution, or consumption of food.
 - 2. Sewage: Domestic sanitary sewage.

1.3 SUBMITTALS

- A. Waste Management Program: Comply with Contract Documents and applicable code requirements for salvaging, recycling, and disposing of nonhazardous waste.
 - 1. Prior to commencement of Work, schedule and conduct meeting with Owner and Architect to discuss proposed Waste Management Program.
 - 2. Develop mutual understanding relative to details of recycling, and rebate programs.
 - 3. Prepare and submit a written and graphic Waste Management Program including, but not limited to, the following:
 - a. Indicate procedures to be implemented.
 - b. Estimate total Project waste to be generated, and estimated cost of disposing of Project waste in landfills.
 - c. Estimate total cubic yards of following waste categories to be diverted from landfill.
 - 1) Clean dimensional wood, palette wood.
 - 2) Plywood, oriented strand board, and medium density fiberboard.
 - 3) Cardboard, paper, packaging.
 - 4) Other items as directed by Owner and Architect.
 - d. Estimate amounts of following waste categories in appropriate units (weight, feet, square yards, gallons).
 - 1) Metals.
 - 2) Gypsum board.
 - 3) Carpet.
 - 4) Paint.
 - 5) Other items as directed by Owner and Architect.
 - e. Submit permit or license and location of waste disposal areas.
 - f. Submit procedures for recycling/re-use program.
 - g. Submit procedures for rebate programs.
 - h. Revise and resubmit Waste Management Program as required by Owner and Architect.
 - 1) Review of Contractor's Waste Management Program will not relieve Contractor of responsibility for control of pollutants and other environmental protection measures.

- B. Submit summary of solid waste generated by Project with each application for progress payment, on form acceptable to Owner and Architect; include manifests, weight tickets, receipts, and invoices identifying Project and waste delivered to following locations.
 - 1. Recycling Centers.
 - 2. Class III landfills.
 - 3. Inert fills.
- C. Prepare rebate information and product documentation as required for Owner to qualify for rebate programs; submit with final closeout submittals.
 - 1. Where feasible submit in electronic format, otherwise in 3-ring binder.

1.4 RECYCLING PROGRAM

- A. Recycling: Implement recycling program that includes separate collection of waste materials of following types as applicable to Project requirements; recycling program to be applied by Contractors and subcontractors.
 - 1. Land clearing debris.
 - 2. Asphaltic concrete.
 - 3. Concrete.
 - 4. Masonry materials.
 - 5. Ferrous metal.
 - 6. Non-ferrous metal.
 - 7. Clean dimensional wood and palette wood.
 - 8. Plywood, oriented strand board, and medium density fiberboard.
 - 9. Paper - bond.
 - 10. Paper - newsprint.
 - 11. Cardboard and paper packaging materials.
 - 12. Glass.
 - 13. Plastics.
 - 14. Gypsum board (unpainted).
 - 15. Paint.
 - 16. Rigid foam.
 - 17. Carpet and pad.
 - 18. Beverage containers.
 - 19. Porcelain plumbing fixtures.
 - 20. Insulation.
 - 21. Others as appropriate.
- B. Handling: Keep materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to recycling process.
 - 1. Clean materials contaminated prior to placing in collection containers.
 - 2. Arrange for collection by or delivery to appropriate recycling center or transfer station that accepts construction and demolition waste for purpose of recycling.
- C. Participate in Re-Use Programs: Rebates, tax credits, and other savings obtained for recycled or re-used materials shall accrue to Contractor.

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11/23/2022

END OF SECTION

SECTION 01 77 00

CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This section describes Contract closeout procedures.
 - 1. Substantial Completion.
 - 2. Final Completion.
 - 3. Project record documents.
 - 4. Material and finish data.
 - 5. Operation and maintenance manuals.
- B. Related Requirements:
 - 1. Section 01 30 00: Administrative requirements including attic stock.
 - 2. Section 01 78 00: Warranties.
 - 3. Section 01 79 00: Demonstration and training.

1.2 SUBSTANTIAL COMPLETION

- A. Immediately prior to Substantial Completion, schedule agency reviews as required for “temporary certificate of occupancy” or for “certificate of occupancy”.
- B. When Contractor considers Work, or a designated portion thereof is substantially complete, submit written notice, with list of items to be completed or corrected.
 - 1. List (“Punch List”): Format pre-approved by Owner and Architect; tabular form with each space listed required.
- C. Within a reasonable time, Owner and Architect will inspect status of completion and may add to “Punch List”.
 - 1. Contractor shall pay for Architect's time and direct expenses where more than one Substantial Completion inspection is required.
- D. Should Owner and Architect determine Work is not substantially complete, Contractor will be promptly notified in writing, giving reasons.
- E. Contractor shall remedy deficiencies and send a second written notice of substantial completion; Architect will reinspect Work.
 - 1. Contractor shall pay for Architect's time and direct expenses where more than one Substantial Completion inspection is required.
- F. When Work is determined to be substantially complete by Architect, a Certificate of Substantial Completion will be prepared in accordance with General Conditions.

- G. DSA Projects: Contractor shall complete DSA 6-C Form and upload electronically to DSABox within three days of completion of Work.

1.3 FINAL COMPLETION

- A. When Work is complete, submit written certification indicating:
 - 1. Work has been inspected for compliance with Contract Documents.
 - 2. Work has been completed in accordance with Contract Documents and deficiencies listed (in 'Punch List') with Certificate of Substantial Completion have been corrected.
 - 3. Equipment and systems have been tested in presence of Owner's representative and are operational.
 - 4. Work is complete and ready for final inspection.
- B. Special Submittals: In addition to submittals required by Contract, submit following.
 - 1. Provide submittals required by governing authorities to governing authorities with copies included in Project Record Documents.
 - 2. Submit final statement of accounting giving total adjusted Contract Sum, previous payments, and sum remaining due.

1.4 PROJECT RECORD DOCUMENTS

- A. Keep documents current; do not permanently conceal any work until required information has been recorded.
 - 1. Owner will provide Contractor with a separate set of Drawings to maintain for Project Record Documents.
 - 2. Store reproducible Drawings, one set of Project Manual, and one copy of each Change Order separate from documents used for construction, for use as Project Record Documents.
 - 3. Indicate actual work on Drawings; indicate actual products used in Project Manual, including manufacturer, model number and options.
 - 4. Update Project Record Documents daily and allow for Architect inspection at least once a month.
- B. At Contract close-out submit documents with transmittal letter containing date, Project title, Contractor's name and address, list of documents, and signature of Contractor.
- C. As-Built Documents: General Contractor shall have electronic "As Built" sets of Contract Documents (Project Drawings and Project Specifications) prepared prior to Final Completion.

1. Contractor shall use one complete electronic set of Contract Documents (Drawings and Specifications) for use for "As-Built".
2. As-Built Drawings: Revise Drawings based on Record Documents and field measurements made after installation and indicate actual locations of structural elements, ducts, piping, wiring, and equipment.
 - a. Professional draftspersons experienced in electronic media used for Contract Documents shall revise original Project Drawings based on information recorded on Project Record Documents.
3. As-Built Specifications: Revise Specifications to indicate manufacturers who provided materials specified along with specifics indicating accessories, options, and finishes used in Project.
 - a. Cross referencing Submittal records is acceptable for accessories only.
4. Review Submittal: Submit two copies of electronic media of "As-Built" Documents to Architect for review.
 - a. After Architect review, revise where indicated and submit final electronic media to Owner.
- D. Final Completion Submittal: At Project Completion submit both Project Record Documents and As-Built Documents with transmittal letter containing date, Project title, Contractor's name and address, list of documents, and signature of Contractor.

1.5 MATERIAL AND FINISH DATA

- A. Provide data for primary materials and finishes.
- B. Submit two sets prior to final inspection, bound in 8-1/2" by 11" three-ring binders with durable plastic covers, clearly identified regarding extent of contents.
 1. Electronic Format: Where available in electronic format, submit USB 3.0 flash drives with information required for material and finish data.
- C. Arrange by Specification division and give names, addresses, and telephone numbers of subcontractors and suppliers. List:
 1. Trade names, model or type numbers.
 2. Cleaning instructions.
 3. Product data.
 4. Maintenance recommendations.

1.6 OPERATION AND MAINTENANCE MANUALS

- A. Provide manuals for:
 1. Electrically operated items.
 2. Electrical equipment and controls.

3. Maintenance manuals provided as part of Submittals.
- B. Submit two sets prior to final inspection, bound in 8-1/2" by 11" three-ring binders with durable plastic covers, clearly identified regarding extent of contents.
- C. Provide a separate volume for each system, with a table of contents and index tabs for each volume.
- D. Arrange by Specification division and gives names, addresses, and telephone numbers of Subcontractors and suppliers. List:
 1. Appropriate design criteria.
 2. List of equipment and parts lists.
 3. Operating and maintenance instructions.
 4. Shop drawings and product data.
- E. Electronic Format: Where available in electronic format, submit two USB 3.0 flash drives with information required for operation and maintenance manuals.

END OF SECTION

SECTION 01 78 00

WARRANTIES

PART 1 - GENERAL

1.1 SUMMARY

- A. Warranties: Compile required, and incidental warranties required by Contract Documents.
 - 1. Manufacturer Warranties: Provide manufacturer's standard warranties where specified including inspections and services included or required as part of manufacturer's standard warranty.
 - 2. Special Warranties: Provide special warranties as required by Specifications sections.
 - 3. These warranties shall be in addition to and not a limitation of other rights Owner may have against Contractor under Contract Documents and which may be prescribed by law, regardless of wording of warranty.
- B. Extended Correction Period: Contractor shall correct failure of materials and systems to perform in a manner consistent with their intended use including but not limited to failure of waterproofing and roofing systems to resist penetration from water.
 - 1. Standard Correction Period: One year after Substantial Completion or Beneficial Occupancy by Owner except where otherwise noted in Contract Documents; coordinate with General Conditions and Supplementary Conditions.
 - a. Items used by Contractor during construction operations shall not be considered substantially completed.
 - b. Correction of Work Period begins with Owner occupancy not completion of component.
 - 2. Extended Correction Period: Requirements are same as standard correction period but for an extended period as indicated in Specifications sections.
 - 3. Contractor Responsibilities: Bear cost of correcting failed work and replacing construction damaged by failure of materials and systems to perform in a manner consistent with their intended use during correction period.
 - a. Requirements for correction period shall apply to Subcontractors, suppliers, installers, and those responsible for failed work.
 - b. Owner and Design Team shall not be responsible for determining degree of responsibility of those involved.

4. Owner's Rights under Law: Correction period shall be in addition to and not a limitation of other rights Owner may have against Contractor under Contract Documents and which may be prescribed by law.

1.2 FORM OF SUBMITTAL

- A. Special Warranty and Extended Correction Period Forms: Provide duplicate copies, notarized or on Contractor and Manufacturer's letterhead without conditions or exceptions to requirements specified.
 1. Assemble documents executed by subcontractors, installers, suppliers, and manufacturers.
 2. Provide table of contents and assemble in binder with durable plastic cover, clearly identified regarding extent of contents.
 3. Electronic Format: Submit USB 3.0 flash drives of warranties, in Microsoft Word.
- B. Manufacturer Warranty Forms: Use manufacturer's standard forms unless otherwise directed in Contract Documents; completed form shall not detract from or confuse interpretations of Contract Documents.
 1. Manufacturer's authorized representative shall sign manufacturer warranties.
 2. Subcontractor and installer shall countersign warranty where specified.
 - a. Provide required warranties for waterproofing and roofing systems countersigned by subcontractor and installer.
- C. Submit final warranties prior to final application for payment.
 1. For equipment put into use with Owner's permission during construction, submit within ten days after first operation.
 2. For items of Work delayed materially beyond Date of Substantial Completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.
- D. Provide information for Owner's personnel regarding proper procedure in case of failure and instances that might affect validity of manufacturer warranty.
- E. Size: 8-1/2" by 11" for three-ring binder; fold larger sheets to fit.

1.3 WARRANTIES AND CORRECTION OF WORK DOCUMENTS

- A. Warranties and Correction of Work Documents are intended to protect Owner against failure of work and against deficient, defective and faulty materials and workmanship, regardless of sources.
- B. Limitations: Warranties and correction of work requirements are not intended to cover failures that result from:

1. Unusual or abnormal phenomena of the elements.
 2. Owner's misuse, maltreatment or improper maintenance of work.
 3. Vandalism after substantial completion.
 4. Insurrection or acts of aggression including war.
- C. Related Damages and Losses: Remove and replace work which is damaged as result of failure, or which must be removed and replaced to provide access for correction of work.
- D. Reinstatement: After correction of work reinstate warranty or extended correction period for corrected work to date of original expiration, but not less than half original period.
1. Correction of Work Period: The general correction of work period specified shall not be extended by corrective work except to extent required to correct failure and repair or replace materials damaged by failure.
- E. Replacement Cost: Replace or restore failing items without regard to anticipated useful service lives where part of correction of work period, extended correction of work period, and special warranty period unless otherwise noted.
- F. Rejection of Warranties: Owner reserves right to reject unsolicited and coincidental product warranties that detract from or confuse interpretations of Contract Documents.

END OF SECTION

SECTION 01 79 00

DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Provide equipment and systems demonstration and instruction in accordance with Contract Documents.
 - 1. Video record seminars and system demonstrations.
- B. Related Sections:
 - 1. Section 01 31 00: Project management and coordination.
 - 2. Section 01 77 00: Contract closeout procedures.
 - 3. Refer to Facility Services Subgroups for mechanical and electrical requirements.

1.2 DESCRIPTION

- A. Seminar Agenda and Outline:
 - 1. Prepare a seminar agenda and outline in consultation and cooperation with Owner. Include following:
 - a. Equipment and systems that will be included in seminars.
 - b. Name of companies and representatives presenting at seminars.
 - c. Outline of each seminar's content.
 - d. Time and date allocated to each system and item of equipment.
 - 2. Submit preliminary seminar agenda and outline for review and comment by Owner.
 - a. Revise and resubmit agenda and outline until all seminar requirements have been satisfied and seminar dates and presenters have been finalized.
 - 3. Submit final seminar agenda and outline no later than eight weeks before date of Acceptance of Work.
- B. Seminar Organization:
 - 1. Contractor's presentation leaders shall chair seminars.
 - a. Coordinate qualification of training personnel, seminar contents, and presentations with Owner.
 - 2. Coordinate individual presentations and ensure manufacturer's representatives scheduled to be at training seminars are present.

3. Arrange for presentation leaders familiar with design operation, maintenance and troubleshooting of equipment and systems.
 - a. Where one person is not familiar with all aspects of equipment or system; arrange for specialists familiar with each aspect.
 4. Coordinate proposed seminar dates with Owner and select mutually agreeable dates.
 5. Video Recording: Arrange for video recording (audio and video) of training seminars and system demonstrations, including seminar and demonstration questions and answers.
- C. Seminar Content:
1. Architect's Consultants will explain design philosophy of primary systems.
 2. Include following information in presentations dealing with specific systems.
 - a. An overview of how system is intended to operate.
 - b. Describe design parameters, constraints and operational requirements.
 - c. Describe system operation strategies.
 - d. Provide information to help in identifying and troubleshooting problems.
 3. Include following information in presentations dealing with equipment.
 - a. Explanation of how equipment operates.
 - b. Recommended preventative and routine maintenance.
- D. System Demonstration:
1. Demonstrate operation of equipment and systems when specified in individual technical sections. Include following in demonstration.
 - a. Start-up and shut down.
 - c. Operation.
 - d. Scheduled and preventative maintenance.
 - e. Troubleshooting.
 2. Demonstration may be conducted at time of original starting with Owner's prior approval.
- E. Seminar and Demonstration Questions:
1. Be prepared to answer questions raised by Owner's personnel at demonstrations and seminars.
 2. If unable to satisfactorily answer questions immediately, provide written response within three days.
- F. Use manufacturer's operation and maintenance data as basis of instruction.

1.3 SUBMITTALS

- A. Video Recording: Submit three copies of each video recording in DVD format acceptable to Owner; include label on each DVD and on each container identifying Project and Seminar content.

END OF SECTION

SECTION 02 40 00

DEMOLITION

PART 1 - GENERAL

1.01 SUMMARY

- A. Removing above-grade site improvements within limits indicated.
- B. Disconnecting, capping or sealing, and abandoning site utilities in place.
- C. Disconnecting, capping or sealing, and removing site utilities.
- D. Disposing of objectionable material.

1.02 RELATED SECTIONS

- A. Section 31 23 00 – Excavation and Fill.
- B. Section 31 23 33 – Trenching and Backfill.

1.03 RELATED DOCUMENTS

- A. California Building Code: Site Work, Demolition and Construction.
- B. California Building Code: Pipes and Trenches.

1.04 DEFINITIONS

- A. ANSI: American National Standards Institute.
- B. CAL-OSHA: California Occupational Safety and Health Administration.

1.05 SUBMITTALS

- A. Follow Submittal procedure outlined in Section 01 33 00 – Submittal Procedures.

1.06 PROJECT CONDITIONS

- A. Except for materials indicated to be stockpiled or to remain the Owner's property, cleared materials are the Contractor's property. Remove cleared materials from site and dispose of in lawful manner.
- B. Salvable Improvements: Carefully remove items indicated to be salvaged and store where indicated on plans or where designated by the Owner. Avoid damaging materials designated for salvage.
- C. Unidentified Materials: If unidentified materials are discovered, including hazardous materials that will require additional removal other than is required by the Contract Documents, immediately report the discovery to the Owner. If necessary, the Owner will

arrange for any testing or analysis of the discovered materials and will provide instructions regarding the removal and disposal of the unidentified materials.

PART 2 - PRODUCTS

2.01 SOIL MATERIALS

- A. Backfill excavations resulting from demolition operations with on-site or import materials conforming to structural backfill defined in Section 31 23 00 – Excavation and Fill.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Protect and maintain benchmarks and survey control points during construction.
- B. Protect existing site improvements to remain during construction.

3.02 RESTORATION

- A. Restore damaged improvements to their original condition, as acceptable to the Owner.

3.03 UTILITIES

- A. Locate, identify, disconnect, and seal or cap off utilities indicated to be removed or abandoned.
- B. Arrange to shut off indicated utilities with utility companies or verify that utilities have been shut off.
- C. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless authorized in writing by the Owner, and then only after arranging to provide temporary utility services according to requirements indicated.
- D. Coordinate utility interruptions with utility company affected.
- E. Do not proceed with utility interruptions without the permission of the Owner and utility company affected. Notify Owner and utility company affected two working days prior to utility interruptions.
- F. Excavate and remove underground utilities that are indicated to be removed.
- G. Securely close ends of abandoned piping with tight fitting plug or wall of concrete minimum 6-inches thick.

3.04 SITE IMPROVEMENTS

- A. Remove existing above- and below-grade improvements as indicated and as necessary to facilitate new construction.
- B. Remove slabs, paving, curbs, and gutters, as indicated. Where concrete slabs, curb, gutter and asphalt pavements are designated to be removed, remove bases and subbase to surface of underlying, undisturbed soil.
- C. Unless the existing full-depth joints coincide with line of pavement demolition, neatly saw-cut to full depth the length of existing pavement to remain before removing existing pavement. Saw-cut faces vertically.
- D. Remove driveways, curbs, gutters and sidewalks by saw cutting to full depth. If saw cut falls within 30-inches of a construction joint, expansions joint, score mark or edge, remove material to joint, mark or edge.

3.05 BACKFILL

- A. Place and compact material in excavations and depressions remaining after site clearing in conformance with Section 31 23 33 – Trenching and Backfill.

3.06 DISPOSAL

- A. Remove surplus obstructions, demolished materials, and waste materials, including trash and debris, and legally dispose of them off the Owner's property.

END OF SECTION

SECTION 1.00 - ELECTRICAL

1.00 - ELECTRICAL SPECIFICATIONS

1.00 - ELECTRICAL SPECIFICATIONS

1.00

1.00 - OR INCLUDED

A. This specification shall apply to all work of or hereinafter specified, shown on Drawings, or as required to provide a complete installation of electrical work for this Project or required under this specification is not limited to that the Electrical Drawings refer to Architectural, Structural, Landscape, and Mechanical/Plumbing Drawings, as well as all other drawings applicable to this Project, which designate the scope of work to be accomplished. The intent of the Drawings and Specification is to provide a complete and operable electrical work that includes all documents that are a part of the Contract.

1.00 - or Included. Furnish labor, material, service and skilled supervision necessary for the construction, erection, installation, connection, testing, and adjustment of all circuits and electrical equipment specified herein, or shown or noted on Drawings, and its delivery to the Owner complete in all respects ready for use.

2. The electrical work include installation or connection of certain material and equipment furnished by other. Verify installation detail, installation and rooming in location from the actual equipment or from the equipment shown drawings.

B. Electrical Drawings. Electrical Drawings are diagrammatic, and are intended to convey the scope of work, indicating intended general arrangement of equipment, conduit and outlet. Follow Drawings in layout of work and verify space for installation of material and equipment based on actual dimension of equipment furnished.

2.00 - QUALITY ASSURANCE

A. Define, manufacture, testing and method of installation of all apparatus and material furnished under requirement of these specifications shall conform to latest publication or standard rule of the following:

1. Institute of Electrical and Electronic Engineers (IEEE)

2. National Electrical Manufacturers Association (NEMA)

3. Underwriter Laboratories, Inc. (UL)

4. National Fire Protection Association (NFPA)

5. Federal Specification (FedSpec)

6. American Society for Testing and Materials (ASTM)

7. American National Standards Institute (ANSI)

- 01 National Electrical Safety Code (NEC)
- 02 Insulated Cable Engineers Association (ICEA)
- 03 American Institute of Steel Construction (AISC)
- 04 State and Municipal Code in Force in the Specific Project Area
- 05 Occupational Safety and Health Administration (OSHA)
- 06 Electronic Industries Association/Telecommunications Industry Association (EIA/TIA)
- 07 California Electrical Code (CEC)
- 08 Local Authority Having Jurisdiction (AHJ) Prescribed Electrical Standard and Code

B. Perform or in accordance with the National Electrical Code, applicable building ordinance, and other applicable code, hereinafter referred to as the "Code." The Contractor shall comply with the Code including local amendments and interpretation without added cost to the Owner. Where Contract Documents exceed any requirements, the Contract Documents take precedence. Where code conflict occurs, the most stringent shall apply. No variance is allowed.

01 Comply with all requirements for permits, licenses, fees and code. The Contractor, at Contractor's expense, shall obtain all permits, licenses, fees, special service cost, inspection and arrangements required for or under this contract, unless otherwise specified.

2. Comply with requirements of the applicable utility company for this Project. Make all arrangements with utility company for proper coordination of or with

3. GENERAL REQUIREMENTS

A. Guarantee. Furnish a written guarantee for a period of one year from date of acceptance.

B. Wherever a discrepancy in quantity or type of condition, wire, equipment, device, circuit breaker, etc., shall materialize, arise on the Drawings and/or Specification, the Contractor shall be responsible for providing and installing all material and service required to the strictest condition noted on Drawings and/or in Specification to ensure complete and operable system as required by the Owner and Engineer.

C. All Core Cutting, Drilling, and Patching

01 For the installation of or under this Section, the aforementioned shall be performed under this Section of the Specification and the Concrete Section of the Specification.

2. No hole shall be allowed in an structural member without the written approval of the Project's Structural Engineer and DSA Approval.

3. For penetration of concrete slab or concrete footing, the work shall be as directed in the Concrete Section of Specification.
4. The Contractor shall be responsible for patching and repairing surface where it is required to penetrate for work under this contract.
5. Penetration shall be sealed to meet the rated integrity of the surface required to be patched and repaired. The patched surface shall be painted or finished to match the existing surface.

D. Verify Drawings and Job Conditions

1. The Contractor shall examine all Drawings and Specification in a manner to be fully cognizant of all work required under this Section.
2. The Contractor shall verify the site and existing conditions where existing conditions differ from Drawings, adjustments shall be made and allowances included for all necessary equipment to complete all part of the Drawings and Specification.

1.0 OR IN COOPERATION WITH OTHER TRADES

- A. Examine the Drawings and Specification and determine the work to be performed by the electrical, mechanical and other trades. Provide the time and amount of electrical material and equipment necessary to place the work in proper operation, coordinate, tested and ready for use. This shall include all conduit, wire, disconnect, relay, and other device for the required operation of all electrical, mechanical and other systems or equipment.
- B. Provide a conduit only route for low voltage wiring required for control of mechanical and equipment described in this or other part of the Contract Documents. Install all control cabinets, conduit, and raceways required for installing conductor to the control.
- C. Install separate conduit between each heating, ventilating and air conditioning unit device and its control panel and/or control motor. Before installing any conduit for heating, ventilating and air conditioning control wiring, verify the exact requirements from the control diagrams provided with the equipment and manufacturer's coordination drawings.

2.0 TESTING AND ADJUSTMENT

- A. Upon completion of all electrical work, the Contractor shall test all circuits, including lighting fixture, lighting control and distribution including distributed systems, UPS, generator, SPD, lighting inverter, transfer switch, motor, circuit breaker, motor starter and their associated circuits and any other electrical item to ensure perfect operation of all electrical equipment.
- B. Equipment and parts in need of correction and discovered during acceptance, shall be immediately repaired or replaced with all necessary equipment and that part of the system shall then be retested. All work replacement or repair shall be done at no additional cost to the Owner.

- C ☐ All circuit components are tested for continuity and circuit integrity. Adequate attention is made for circuit not conforming to test criteria.
- D ☐ All test reports, including copies of an approved Energy Code Acceptance Form (CA Title 2) Acceptance for Code Compliance Form, should be submitted to the Engineer at completion of project.

IDENTIFICATION

- A) Nameplate shall be provided for unit identification, unit ear, unit board, distribution board, distribution panel, panel board, motor control center, transfer, transfer unit, contactor, starter, disconnect unit, enclosed circuit breaker/unit, inverter, UPS, PDU, RDC, SPD, lightning control panel, diode panel, door release unit panel, fire alarm/central monitoring terminal cabinet/cooler unit/control panel, and all low voltage unit terminal and control cabinet.

- Na~~me~~date in ~~crit~~ion ~~all~~ ~~be~~ identical to the ~~en~~ent ~~de~~inition indicated in ~~plan~~ and ~~specification~~ Na~~me~~date ~~all~~ ~~be~~ ~~en~~ra~~ced~~ ~~it~~ ~~the~~ ~~de~~ice ~~de~~inition/identification on the top line, ~~once~~ identification for the ~~de~~ice on the 2nd line ~~per~~ CE, Art 10 and load ~~de~~inition for the ~~de~~ice on the ~~otto~~ line ~~are~~ load ~~de~~inition ~~con~~it of a ~~franc~~ ~~circ~~it, ~~on~~ ~~it~~ ~~otto~~ line ~~are~~ ~~de~~ice ~~de~~inition ~~is~~ not indicated on ~~plan~~/~~specification~~, Contractor ~~all~~ ~~must~~ ~~it~~ a ~~written~~ clarification ~~re~~fer to the Engineer

- ## Example Transformer TA

- ☐ So ☐rce Di ☐connectin ☐ Location ☐ S ☐itc ☐board MSA located in R ☐ ☐0
 2 ☐ Load ☐ Panel ☐ ☐LA and ☐ ☐LB

2. All circuit breaker/fuses in its ear, its board, distribution board, distribution panel, PS of the circuit breaker, PD of feed circuit breaker and motor control center shall have individual nameplate located immediately adjacent to the respective device. Nameplate inscription shall identify the downstream equipment or device served by the circuit breaker or fuse.

- B Identification nameplate, ON, call delineated/enframed modified acrylic that is 3/32" thick, V-shaped, attached, suitable for use in 000 deFF a agent, it beveled edges and engraved site letter 3/" size, in size, on 1/2" size black background utilitarian and optional stand cover site for in-line line of text where two line of text are required, provide in size 2" size nameplate where three line of text are required, provide in size 2" size nameplate Provide site letter on red background for all CEC Article 707 essential cover site, Article 700 E-enc Site, Article 700 Label required stand site and Article 700 COPS

- C Identification nameplate for neoplastic, neoplastic, distribution board, distribution panel, panel board and motor control center shall be attached to neoplastic and factorer provided creosote neoplastic and factorer factor creosote drilled hole. A factor option to rivet identification nameplate to the element is only acceptable if creosote fasteners are not an available option from the

RECORD DRAINGS

A. Drawings of Record: The Contractor shall provide and keep up-to-date, a complete record set of drawings. These shall be corrected drawings and shop drawings from the original Drawings. The set of printed drawings shall be kept on the job site and shall be used only as a record set. The drawings shall not be considered a authorization for the Contractor to make changes in the layout without definite instruction in each case upon completion of the work, the contractor shall provide a complete set of As-Built drawings. As-Built drawings shall be generated at the latest edition of AutoCad and drawn to scale. Submit electronic copies to the Architect at other close out documentation upon completion of project. Refer to the Schedule General Conditions for complete requirements.

APPROVALS, EQUALS, SUBSTITUTIONS, ALTERNATIVES, NO NO EQUAL

A. Approvals: Where the words (or similar terms) "approved", "approval", "acceptable", and "acceptance" are used, it shall be understood that acceptance of the Owner, Architect and Engineer are required.

B. Equal: Where the words (or similar terms) "equal", "approved equal", "equal to", "or equal by", "or equal" and "equivalent" are used, it shall be understood that these words are followed by the expression "in the opinion of the Owner, Architect, and Engineer". For the purpose of specifying product, the above words shall indicate the same size, grade of the same construction material, manufactured with equivalent life expectancy, same aesthetic appearance/finish include craftsmanship, physical attributes, color and finish, and the same performance.

C. Substitution: For the purpose of specifying product, "substitution" shall refer to the substitution of a product not explicitly approved in the construction documents/specification.

1. Substitution of specified equipment shall be submitted and received by the Engineer ten (10) days prior to the bid date for review and written approval. Rejection of a proposal for all substitution will be the sole responsibility of the Contractor. To receive consideration, request for substitution must be accompanied by documentation proof of its equality with the specified material. Documentation proof shall be in letterform and identify the specified material/ material alongside proposed equal material/ material. In addition, catalog, brochure and sample, if requested, must be included in the submittal. ONLY PRE-BID APPROVED PRODUCTS, ISSUED VIA A FORMAL BID ADDENDUM TO ALL BIDDERS, WILL BE ALLOWED ON THE PROJECT REGARDLESS OF THE APPROVAL ON ANY SUBSTITUTION, ALL BIDS SHALL BE BASED ON THE PRODUCTS EXACTLY AS SPECIFIED. PRICING FOR EACH APPROVED SUBSTITUTION SHALL BE INCLUDED IN THE BID SUBMITTAL AS A SEPARATE LINE ITEM.

2. In the event that written authorization is given for a substitution, after award of contract, the Contractor shall submit it to the Engineer notation from supplier/distributor of cost the specified and proposed equal material for price comparison, attach a verification of delivery date that conform to the project schedule.

3. In the event of cost reduction, the Owner will be credited with 100 percent of the reduction, arranged as Change Order.

The Contractor warrants that substitution proposed for specified items will fulfill the function required.

D. Alternate/Alternatives: For the purposes of specifying products, "alternatives/alternates" may be established to enable the Owner/Architect/Engineer to compare cost where alternative material or method might be used. An alternate price shall be submitted in addition to the base bid for consideration. If the alternate is deemed acceptable, written authorization will be issued.

E. No Known Equal: For the purposes of specifying products, "No Known Equal" shall mean that the Owner/Architect/Engineer is not aware of an equivalent product. The Contractor will need to submit a "Substitution" item, per the requirements listed above, if a different product is proposed to be utilized.

2600 SHOP DRAWINGS/SUBMITTALS

A. Shop Drawing/Submittal, unless required otherwise by General Project Specification or instruction to bidder, shall be submitted in electronic format (PDF) to include a Letter of Transmittal (PDF). Bidder shall file a list of the drawings submitted with date and/or date of completion contained within the submittal. Drawings and material cut sheets shall be complete in every respect and edited/marked to indicate specific items being provided. Printed/Hard copies are not acceptable.

B. The Shop Drawing/Submittal shall be marked with the name of the project, numbered consecutively, and bear the approval of the Contractor as evidence that the Contractor has accepted the Drawing. A Drawing submitted without this approval will be returned to the Contractor for resubmission.

C. If the shop drawing shows variation from the requirement of the Contract because of standard shop practice or other reason, the Contractor shall make specific mention of such variation in the Contractor's letter of transmittal. If the substitution is accepted, the Contractor shall be responsible for proper advertisement that a change caused by the substitution. Samples shall be submitted when requested.

D. Only products listed as "Equal" within the contract documents, along with formally approved "Substitutions" will be reviewed. Products not conforming to these items will not be reviewed and will be returned to the Contractor for resubmission.

E. Review comments issued in response to shop drawing/submittal are:

1. "No Exception Taken" Product approved as submitted.

2. "Furnish as Corrected" Resubmission not required, although the Contractor shall provide the submitted product with correction as noted.

3. "Revise and Resubmit" Resubmission required with correction as noted.

4. "Rejected" Resubmission required based upon the originally specified product.

F. Schedules shall be included on the following, but not limited to:

1. Lighting Fixture, Load, and Ballast

2. Fire Alarm System/Central Monitoring System

3. Wiring Device

4. Lighting Control System/Dimming System Product

5. Terminal Cabinet

6. Arc Flash, Short-Circuit and Coordination Study

7. All other products called out on drawings that call for schedule items

260000 MAINTENANCE, SERVICING, INSTRUCTION MANUALS AND WIRING DIAGRAMS

A. Prior to final acceptance of the job, the Electrical Contractor shall furnish to the Owner at least four copies of operating, maintenance, and servicing instructions, as well as four copies of wiring diagrams for the following, but not limited to, items or equipment:

1. Lighting Control System/Dimming System

2. Fire Alarm System

B. All wiring diagrams shall specifically cover the specific installed Technical drawings will not be accepted. For copies shall be presented to the Owner.

260200 INTERRUPTION OF SERVICE/SERVICE SHUTDOWN

A. An interruption of electrical service, electrical circuit, electrical feeder, panel, system, communication system, fire alarm system, etc. required to perform work, shall meet the specific prior approval requirement of the Owner. Schedule shall be coordinated with the Owner to be performed at the Owner's convenience.

B. Interruptions/outages of any of the Owner's systems and services mentioned above shall be scheduled to occur during other than the Owner's normal business hours. An overtime cost shall be borne by the Contractor.

C. See drawings for an additional requirement regarding outage, interruption and anticipated service required.

SECTION 260000 - ELECTRICAL

260000 MATERIALS

A. Materials and Equipment: All electrical material and equipment, including conduit, made equipment, shall be new and shall be listed under either Laboratory Test and their label or be listed and certified by a Nationally Recognized Testing Laboratory (NRTL) that is also recognized by the local Authority Having Jurisdiction (AHJ).

if/are controlled. Stickers, field applied or in or other non-permanent or in are not acceptable. There a GFCI receptacle outlet is required to be controlled, provide an adjacent controlled double receptacle outlet connected on the load side of the GFCI outlet. Generally, one receptacle in a double receptacle outlet is required to be controlled. It is a code the lower receptacle or upper receptacle based on manufacturer offering. However, the controlled receptacle location within a controlled receptacle outlet shall remain consistent throughout the project. There an existing double receptacle outlet is required to be controlled, provide a new wiring device with the appropriate control configuration necessary to comply with it. All controlled receptacles shall be connected to a branch circuit controlled in an occupancy sensor or a fixed or related lighting control system. Acceptable manufacturers are Leviton, Pass and Seymour and Hubbell.

The following printing device plate all are connected to entrance

- a. The generated circuit, circuit in pilot light, and circuit for the control of motor, heater and ventilator. Enclosed all the block and occur on the enclosed side of the plate indicating the motor, heater, or ventilator controlled.
- b. All trainable feel and motion device plate. All be enclosed in a rotary enclosure. Process effect for block lettering on trainable feel device plate. This is a case according to a later etc in process. All lettering all be 3/4" wide. Provide a dimensioned overall drawing detailing a typical device face plate. It is enclosed.

F₁ ☐ eat_{er}roof Outlet Cover/A₁ ☐ ☐ die₁ All Rece₁tacle₁ identified a₁ ☐ eat_{er}roof
on the dra₁in₁ ☐ ☐ all ☐ ☐ ☐ eat_{er}re₁tant, ta₁ ☐ ☐ ☐ re₁tant, GFCI t₁ ☐ ☐ ☐ and
e₁ ☐ ☐ ☐ ☐ a₁ follo₁ ☐ ☐ ☐

The P.A. Receptacle shall consist of a lined, locatable, cathodic, self-cleaning, airtight receptacle door that is set location listed rain tight while "in use" unit shall consist of CEC Article 0000A and B and ON on drawing provide a minimum of 2 separate compartment suitable for installation of power receptacle, AV or communication outlet. Additionally, unless otherwise noted on drawing, provide the following:

- a) A 20A heat/ventilant, transfer/vent, GFCI double receptacle in the first compartment. Provide branch circuiting per plan.
- b) A plan detail plate indicate for field installation of cooler, AV or communication device in the second compartment.
- c) Where indicated on plan area requiring data, AV, or other low voltage service outlet, provide minimum 3/4" CMO cutout drill through routed from the second compartment to nearest low voltage drill box. Where shown mounted in a building wall, an plan indicated compartment wall be embedded in 3/4" CMO cutout drill through routed to the nearest accessible ceiling space.
- d) See wiring device section of trade specification for additional wiring device plate cover labeling requirement.
- e) Where indicated per device minimum of 2 per project to the Owner project manager upon completion of project.
- f) Confirm color order coat finish as selected per Architect. Include all coats in take off for take off.

1. Service entrance circuit breaker shall allow a 100A (A) frame shall be thermal magnetic trip in the time current characteristic curve of the indicated type. Service entrance main circuit breaker and main circuit breaker, 100A frame and larger, shall be 100% rated, solid-state type as outlined in the specification. All other service entrance circuit breaker, 100A frame and larger, shall be 100% rated, solid-state type as outlined in the specification.
2. All non-service entrance circuit breaker 22A and larger shall be thermal magnetic type and shall contain a data plate indicating instantaneous tripping time to 0 time tripping. Breaker shall have either a re-ratting dial or a fixed tripping time. Breaker shall be interlocked so that they are not interchangeable between frames. Additionally, all non-service entrance circuit breaker, 100A frame and larger, located in 120V, 3-phase, 3-wire or 277/120V, 3-phase, 3-wire systems, distribution board, panel board or sub-panel shall be solid state, 100% rated. Breaker shall have a test point for testing long delay, short delay and instantaneous, and ground fault where applicable function of the breaker as shown of a 20V operated test bit. Contractor shall utilize a test bit capable of testing all breaker 100A and above at the Engineer's request.
3. All non-service entrance circuit breaker less than 22A shall be molded plastic case, air circuit breaker conforming to UL 1000. Provide breaker with thermal magnetic trip unit, and a common trip bar for two or three pole breaker, connected internally to each pole to trip in the event of one pole will automatically trip all poles of each breaker. Provide breaker of trip-free and trip-indicating action type, with a data plate, indicating contact. Provide in the two or three pole breaker interconnectivity. Provide a locking device for circuit breaker as shown on the Drawing.
4. There are a Current Limiting Circuit Breaker (CLCB) indicated on drawing or as required elsewhere in the specification, provide a UL listed current limiting thermal magnetic circuit breaker. ON. An independent operating limiter section within a molded case is not allowed. Coordinate CLCB rating as required to protect electrical system components on the load side of the CLCB to include, but not limited to, protection automatic transfer switch, panel board and lighting control panel.
5. There are a solid-state circuit breaker indicated on drawing or as required elsewhere in the specification, provide a solid-state circuit breaker with the following function complete with a built-in current transformer. The following shall be independent data plate and consist of Overload/Long Time Amp Rating, Long Time Delay, Short Time Delay, Short Circuit/Instantaneous Pickup, but shall also include Short Trip and/or Ground Fault if so indicated on the Drawing. Rating shall be interlocked so that they are not interchangeable between frames. Breaker shall have a test point for testing long delay and instantaneous, and ground fault where applicable function of the breaker as shown of a 20V operated test bit. Contractor shall utilize a test bit capable of testing all breaker 100A and above, at the Engineer's request.

1. Circuit breakers, 200A frame or larger, or circuit breakers that are or adaptable trip setting, 200A or larger, shall be equipped with an Emergency Reducing Maintenance Switch that complies with CEC 2007 B333 unless specified elsewhere with an alternate arc energy reduction method allowed in the applicable code section.
2. Tandem or half-rated circuit breakers are not permitted.
3. Series-Rated Breakers. A listed series-rated combination of breakers can be used to obtain panelboard interrupting rating shown on Drawing. If series-rated breakers are used, the circuit board, distribution board, and panel board shall be appropriately labeled to indicate the use of series-rated breakers. Such drawing shall include chart of A listed device, which coordinate to provide series rating.
4. Circuit breakers shall be standard interrupting construction. Panelboard shall accept standard circuit breakers up to 200A.
5. Circuit breaker handle accessories shall provide provision for locking handle in the on or off position.
6. Switch trip equipped circuit breakers shall be provided on all elevator feeder.
7. Temperature compensating circuit breakers shall be provided when located in outdoor enclosure or when located in an enclosure subject to direct sunlight or heat due to the nearby industrial process, etc.
8. Provide 7 degree Celsius rated conductor lugs/lugs that are required on all circuit breakers to accept conductor quantities and size shown on drawing.
9. All circuit breaker termination shall be suitable for use with 7 degree Celsius rated conductor. Listed, dual-rated in terminal, straight or offset, are acceptable for use in accordance with rating overrated or parallel conductor installation.
10. Circuit breakers serving Fire Alarm or Central Monitoring panel and power supplies shall be red in color and lockable in the "ON" position.

H. Disconnect Switches

1. Non-fusible or fusible, dead-end, externally operated or internally operated, 200V AC. Provide NEMA 3R, lockable enclosure for all switches located on rooftop, in wet or damp areas and in an area exposed to the elements.
2. Fusible switches shall be Class "R" when 600A or less or Class "L" when greater than 600A.
3. Appearance, Hardware, Voltage and number of poles per drawing. All shall be clearly marked on the switch nameplate.
4. Provide the Owner's project manager with one set of files and two sets of file clips/files for each set of files on the project.

Motor Protection

- a. Where rating of protective device is greater than 100A, provide Branch and High Capacity, Class L, current limiting, and an interruption rating of 200,000A RMS
- b. Where rating of protective device is 100A or less, provide Branch and Class R series current limiting fuse, and an interruption rating of 200,000A RMS
- c. Where fuse feeding motor are indicated, but not sized, it shall be the responsibility of the Contractor to coordinate the fuse size with the motor to provide proper motor running protection
- d. When refection time fuses are specified (Class R series) the fuse holder of all circuits specified in other Section shall be suitable for the fuses provided

Load Control/Disconnect Switches

- See drawings for Load Control and/or Disconnect Switches specified and specification

Fire Alarm System/Central Monitoring System

- See drawings for Fire Alarm System Voice specification

Conduit

- Galvanized Rigid Conduit (GRC) shall be full weight threaded steel Steel conduit shall be protected overall zinc coating to inside and outside surface, applied with hot dip, galvanizing, or sacrificial process
2. Intermediate Metal Conduit (IMC) shall be hot dipped galvanized in accordance with UL 222, and meet Federal Specification 11C 100 latest revision
3. Electrical Metallic Tubing (EMT) shall be zinc coated steel with baked enamel or plastic finish on inside surface. EMT shall be dipped in a chromic acid bath to chemically form a corrosion resistant protective coating of zinc chromate over galvanized surface
- Flexible Metal conduit shall be constructed of aluminum or hot dipped galvanized steel. Tripp and all interlocking to provide create flexibility. It shall be tested. Interior surface shall be smooth and offer finish. Draw to follow in conductor. Be only as directed in writing of the Engineer. It is the exception of 100 HP feeder and 100 HP branch circuits. All be run in flexible aluminum conduit
- Liquidtight conduit (Sealtite) shall be galvanized steel flexible conduit as above except with oil and oil proof jacket, correct length and factor installed fitting. For outdoor installation and motor connection only. Note other as noted on drawings
- Factorable, or off-site assembled, or in-site assembled Metal Clad (MC) Cables, Tree AC Cables, Tree NM Cables, Tree B Cables, etc. shall not be

Conductor size indicated in the Allowed Specification Definition Section or Deductive/Additive Alternate Pricing Section generally located on the color list drawing

7. Non-metallic Flexible Tubing (ENT) shall not be conductor size indicated in the Allowed Specification Definition Section or Deductive/Additive Alternate Pricing Section generally located on the color list drawing of ENT, if allowed, is strictly limited to use in CM walls and ceiling structure, direct or indirect in critical area Engineer. See PART 3 SECTION section in the specification for additional installation requirements

Non-Metallic Conduit

- a. Polyvinyl chloride (PVC) rigid conduit, Schedule 40, Type II for underground installation only, solvent welded joint, conforming to Underwriter Laboratories, Inc. (UL) requirements, listed for exposed and direct burial application
- b. Conduit and fittings shall be produced by the same manufacturer

L Fittings

1. Conduit fittings shall be installed inside and out, taper threaded with integral insulating sleeve and of the same, size and type required to facilitate installation or removal of wire and cable from the conduit and tubing. The fittings shall be of steel, installed inside and out, threaded galvanized, and weathered cadmium plated
2. Metallic conduit covers shall have the same finish as the fittings and shall be provided for the opening of each fitting where conductors do not pass through the cover
3. Connector, coupling, locknut, sleeve and capped with rigid conduit shall be steel, threaded and threaded galvanized. Bore shall be insulated
4. ON all EMT fittings, connectors and couplings installed in concealed location, area not considered to be wet or damp location, the AHJ, or area not subject to physical damage, shall be steel, zinc or cadmium plated, threadable, coupling, steel locking ring with insulated throat where suitable for use, steel set screw fittings are allowed for trades sizes of 2" and smaller. Insulated throat is not required for fittings, connectors and couplings 1" and smaller
5. All interior and exterior EMT fittings, connectors and couplings, 2" and smaller, installed in exposed or concealed location that are considered not the AHJ to be wet or damp location, shall be Raintite listed, steel, zinc or cadmium plated, threadable, coupling, steel locking ring with insulated throat. If Raintite listed, EMT fittings, connectors and couplings are available for a given trade size or if conduit is installed in an area subject to damage - provide rigid metallic or intermediate metallic conduit, fittings, connectors and couplings as required

6. File the steel condit connector all be a alleade iron cla or seee the or steel titin the it in lated troat The fini all be inc or cad i latin
7. Condit union all be "Eric on" co lin or a roed eal The of r nning t read ill not be er itted

Maximum Voltage Conductor Wire and Cable

- 00 All conductor shall be color-coded Provide stranded conductor for 000 A G and larger or when a single connection to a rating of aciner the connection "for" the connector or transition to solid conductor when connecting to itc, receptacle, etc
- 20 The THHN/TH N2 tero plastic, 000 Volt, L approved, dr and let location rated at 00 degree Celid, for conductor of all i e fro 002 A G to and including 0000 c cil RHH/RH in llation i allowed onl to provide an Electrical Circuit Protection S ite to co d it CEC Article 000 and 700
- 30 Fire and cable shall be ne, an factored not ore than 00 mont prior to installation, shall be e, t e of in llation, volta e rating and an facter name er anentl ar ed on o ter co erin at re lar inter al
- 00 Fire and cable shall be factor color-coded 00 inte al i entation it a e arate color for eac a e and ne tral Eac ite shall be color-coded and it shall be maintained tro co t
- 00 Site 00 Conductor Color Codin

a□ Power 20□/□20V, 3PH, □□ □

- [illegible]

Power 400/277V, 3PH, 3

- ☐ Place A ☐ Brown
 2 ☐ Place B ☐ Orange
 3 ☐ Place C ☐ Yellow
☐ Neutral ☐ Green ☐ Grey ☐ Pink ☐ Place Color Tracer
☐ Sitter ☐ Left ☐ Right ☐ Sitter ☐ Left ☐ Right ☐ all also identified ☐ Caratell ☐
 n ☐ erical ta ☐
☐ Traveler ☐ Right ☐ Left ☐ or Pin ☐

- c Ground Conductor Green
d Isolated Ground Conductor Green it continues to be a tripping
e Fire Alarm Siren Alarmed it is an indicator

- All color-coding for 2 trophic A G condكتور all e a identified a o e
 Condكتور A G and larer all e identified it tili in a e ta e at
 eac ter ination

- ☐ All in conductor ☐ all not ☐ ☐ ☐

- ☐ irelandlin co found ed a significant in installin condctor in race a all onl e "Pol water " No oil, rease, raite, or ilar stance a e ed Pdin of %0 or larer condctor all e done it an aored cae ill acine Otter etod ee in eicle and loc and tacle to install condctor are not accae

Notation and Policies

- ☐ For interior dr□location□ □o□e□ □all □e NEMA □ □al□anized one□piece dra□n
□eel, □noc□ot t□□e, □it□re □o□ade, □ac□ine □cre□ □ec□red co□er□

2. For outside, daytime or surface location, choose all of the NEMA 3R weather-resistant or cast iron fittings or components, painted, non-ferrous plastic or treated wood.

3. For in-grade application, function and all code shall be recast concrete or old fiberla and factored CRIT, Brooken, or tiltValt Co Fiberla code shall

- a ☐ Be ☐ed only in land ☐ca ☐e ☐lanter area ☐at are not ☐ect to da ☐a ☐e fro ☐
la ☐n ☐o ☐er ☐ tractor ☐and ot ☐er ☐ ac ☐iner ☐
- ☐ Not ☐e ☐ed in la ☐n or t ☐rf area ☐
- c ☐ Not exceed 11" W x 17" L in ☐e ☐nle ☐re ☐ired to ☐e lar ☐er to ☐et code
re ☐ire ☐ent ☐

- ☐ All ☐ e ☐ all ☐ e ☐ ed for t_en ☐ er and ☐ e ☐ of cond_ct_ror_s and cond_it_i

- ☐ All ☐e located in traffic area ☐ all ☐e traffic rated ☐

Outlet Bores

- For fixture, only all be aligned, one piece drawn steel, knob to the
 ended it 3/4" fixture top and later ring were required

2. For convenience of let, all pipe, or other device, let to be all be
calculated one piece drawn feel, photocopy to be " " "2" / " " in the
it is later in a required

3. For location where standard codes are not available due to number and type of condition to be terminated, special codes shall be defined to fit space or meet other requirements, and submitted for approval.

Section 70 and a related to the installation all electrical equipment furnished under this contract. See Specific Project Site Seismic Criteria on architectural and/or structural plan which include Building Occupancy Category, Seismic Design Category, Design Spectral Response Acceleration S_{DS} , Height factor ratio H/Z and Site Class Non-structural Component Importance Factor I_P for a particular component shall be determined based on the following criteria:

- a) $I_P \geq 0$ Non-life Safety, Non-structural Component in an Occupancy Category IV Facility not required for continued operation of the facility or in another Occupancy Category Facility where component failure will not impair continued operation of the facility
- b) $I_P \geq 1$ Designated Seismic Site are those non-structural components in an Occupancy Category IV facility except a noted above or that are a part of an code-defined Critical, Life Safety, Emergency and Life-Sustaining Required Standby Electrical Site. Additionally, those non-structural components containing hazardous material shall be classified as Designated Seismic Site. All Designated Seismic Site are generally identified on the plan, the plan include items such as generator, automatic transfer switch, UPS unit and all associated electrical distribution equipment and components necessary for the designated seismic site to form a complete and operable site. The Contractor shall detail the reinforcement for identifying Designated Seismic Site. For an electrical component either identified on the plan or determined by the contractor to be a Designated Seismic Site, all line and load side electrical distribution items including that Designated Seismic Site including, but not limited to, feeder, panel board, switchboard, transformer, all related components and attachments etc. shall be considered a part of the designated seismic site for the purpose of code compliance and seismic certification.
- c) H/Z Height factor ratio. See plan for reflective equipment location.

2) Provide a detailed detail for each of the following seismic restraint items to be used as required:

- a) Restraint Channel Bracing consisting of MFMA, shop or field fabricated bracing made of hot-rolled steel channel with appropriate for attachment to braced component at one end and to building structure at the other end, with other attaching component, and with corrosion resistant coating in tension, compression, and torsion force.
- b) Restraint Cable consisting of ASTM A 303 galvanized steel cable. End connection made of steel plate with nut and washer, bracket, splice, and bolt defined for restraining cable service, with a minimum of two clamping bolts for cable end attachment.
- c) Seismic Restraint Accessories consisting of anchor rod/anchor rod stiffener plate, die, with functional steel connector for attaching anchor to rigid channel bracing and/or restraint cable, including for floor and wall mounted equipment and/or bolt and resilient isolation washer and including.
- d) Mechanical Anchor Bolt consisting of drilled-in and threaded or female threaded in zinc-coated steel for interior application and stainless steel for exterior application. Select anchor bolt with strength required for anchor and attached according to ASTM E 488.

- e. Adhesive Anchor Bolt connection of drilled-in and cast-in-place concrete containing rebar and accelerator, or injected polymer or grout mortar adhesive. Provide specific LEED-compliant environmentally friendly rebar and adhesive on all LEED projects. Provide anchor bolt and card are zinc-coated steel for interior application and stainless steel for exterior application. Select anchor bolt with thread required for anchor and a tested according to ASTM E 488.
3. Structural steel shall include design calculation and detail for seismic restraint connection. It shall perform seismic resistance, design criteria, and analysis data. Design and detail the contractor's structural engineer responsible for their preparation. Calculation shall include, but not be limited to, static and dynamic loading caused by seismic event, operation, and seismic and, if applicable, wind force required to select seismic and, if applicable, wind restraint and for design of vibration isolation device. Provide seismic and wind restraint detailing to support seismic selection, arrangement of restraint, attachment location, method, and location. It shall also be identified to include their thread, direction and value of force transferred to the structure during seismic event and association with vibration isolation device. Size of component shall be selected so thread will be adequate to carry present static and seismic load to accommodate 200% future capacity within specified loading limit.
4. An approved and evaluation documentation shall have a California Office of Statewide Health Planning and Development (OSHPD) Special Seismic Certification Program (OSPD) on training horizontal and vertical load testing and analysis. It shall also be seismic restraint rating, ICC-ES or another agency acceptable to a jurisdiction. Rating shall be based on independent testing or referred to rating based on calculation. If pre-approved rating are not available, structural steel based on independent testing are referred. Calculation including combined shear and tensile load that support seismic restraint design shall be designed and detail by a qualified professional engineer.
5. Coordinate the location of embedded connection card are with supported equipment attachment and mounting point and with requirements for concrete reinforcement and for other specified elements in the project specification.
6. Install flexible connection in run of raceway, cable, wireway, cable tray, and wherever there is a cross seismic joint, where adjacent section or branches are supported on different structural elements, and where connection is terminated to equipment that is anchored to a different structural element from the one supporting the attachment. Flexible connection limitation of the CEC shall apply.
7. Install seismic restraint device in method approved by OSHPD or an agency acceptable to a jurisdiction. It shall be required structural steel for component.
8. Multiple Raceway or Cable. Secure raceway and cable to track or other with clamp approved for application by OSHPD or an agency acceptable to a jurisdiction.

- 1. The contractor shall engage a qualified testing agency to perform tests and inspections as specified in other Project Specifications. All tests shall include at least four of each type and size of installed anchor and fastener selected by Architect. Schedule tests with Owner, Architect, before connecting anchor device to retrained component. Include test connection testing as been approved, and at least seven days advance notice. Obtain Architect approval before transferring test load to structure. Provide test bar load reading before performing test to 10 percent of rated roof load of device. Prepare and submit test and inspection report.

- 2. Trenching and Backfilling Contractor shall be responsible for trenching and backfilling. Refer to Trenching and Backfilling Section of the Specification for complete requirements.

SECTION 260000 - ELECTRICAL

3. PREPARATION AND INSTALLATION

A. Installation of Conduit and Outlet Boxes

- 1. All conduit installed in the drop ceiling or ceiling of a building shall be steel type EMT, aluminum type EMT, or Intermediate Metal Conduit (IMC). Flexible conduit shall not be used in lieu of EMT, IMC or rigid conduit except as noted herein.
- 2. Galvanized rigid conduit (GRC) or intermediate metal conduit (IMC) shall be used as follows:
 - a. As noted on the drawing.
 - b. As considered exposed to damage on the local AHJ.
 - c. As installed in wet or damp location and of a trade size where listed Raintite fitting, connector, couplings etc. are available.
 - d. As required by CEC Article 7.3.
 - e. As installed in concrete and masonry. The use of ENT in CM walls and masonry structures shall be allowed only as directed in writing of the Engineer. Request for ENT substitution shall be made prior to bid and in accordance with pre-bid substitution request requirements of the Specification.
- 3. Intermediate metal conduit (IMC) is approved for use in all locations as approved for GRC or steel type EMT and in accordance with CEC Article 3.2.
- 4. Flexible steel conduit shall only be permitted to be used at listed fixture outlets and connections to lighting electrical equipment. Except when concealed in walls or other structural elements, all flexible steel conduit runs shall be less than 10". All outdoor installation shall be made within listed flexible fitting approved fittings. Include a separate insulated green ground conductor sized per CEC in each conduit. Other uses of flexible conduit shall be allowed only as approved in writing of the Engineer.
- 5. Flexible listed conduit shall be installed in lieu of the flexible steel where required by the CEC in damp and wet location, where exposed to weather, in

refrigerated area, or less, and/or between electric joints. All rotating electrical equipment shall be grounded in accordance with the National Electrical Code (NEC) and shall not exceed 100 ohms. Include a separate insulated ground conductor bonded per NEC in each conduit. Other type of liquidtight flexible conduit shall be allowed as approved in writing by the Engineer on a case by case basis.

- 1. Rigid metallic conduit installed underground or embedded in concrete shall be 1" trade size minimum and shall be galvanized or 20 mil Polyvinyl Chloride (PVC) conduit installed underground or embedded in concrete shall be 3/4" minimum trade size.

- 2. Where required for providing an electrical circuit protection device to comply with NEC Article 240 and 700 utilize UL Listed 2-pole fire-rated, MC cable or UL Listed 2-pole fire-rated RHH/RH conductor in conduit.

- 3. Conduit shall be run so as not to interfere with other piping, fire or equipment.

- 4. The end of all conduit shall be cut square, carefully reamed out to full size and shall be considered in fitting.

- 5. No running thread will be permitted in locations exposed to the weather, in concrete or underground. Special union fittings shall be used in these locations.

- 6. Where conduit is underground, under slabs or grade, exposed to the weather, or in wet location, use liquidtight and painted.

- 7. All metal conduit in a concrete and where concealed under floor slabs shall be painted with thread compound prior to painting.

- 8. PVC conduit shall not be run in walls except where approved by the Engineer prior to bid in limited instances that shall include concrete or CM walls in site retaining, parking structure, or exterior equipment yard or enclosure walls, etc.

- 9. Where conductor enter a raceway or a raceway in a cabinet, pull box, junction box, or auxiliary gutter, the conductor shall be protected by a plastic sleeve in the fitting providing a smooth rounded in-lap surface.

- 10. Where conduit extends through roof to equipment on roof area, the Contractor shall provide flashing material compatible with the roofing system as required by the roofing specifications or as required by the Owner's roof warranty. This flashing shall be delivered to the roofing Contractor for installation. The actual location of all roof penetration and outlets shall be verified by the Architect/Owner's Contractor to verify the location of flashing prior to bid and include all costs.

- 11. All conduit shall be supported at intervals not less than 10' and within 2' from an outlet and at each side of bend and elbow. Conduit supports shall be galvanized, lead painted, non-toxic conduit clamps or approved.

7. Raceways shall be installed in accordance with the raceway conditions of the code and shall be attached to a finished steel lotted channel, or other approved raceway by a threaded rod attached directly to the building structure.

8. Nail-in conduit support, one-piece set screw type conduit clamp or perforated iron for conduit support shall not be used.

9. Seismic Conduit Support

- a. All conduit shall be supported in such a manner that it is securely attached to the structure of the building. Attachment is to be capable of resisting the triaxial seismic forces of conduit and contents in any direction. Maximum spacing of support and brace are to be as follows:

CONDUIT SIZE	MAXIMUM SPACING
1/2" to 3"	10'
3 1/2" to 6"	12'

20. All conduit runs shall be installed parallel or perpendicular to wall, structural beam, or intersection of vertical plane and ceiling. Field bend and offset shall be avoided where possible. Cracked or deformed raceways shall not be installed.

21. Open knockout in outlet boxes only where required for inserting conduit.

22. Locate all outlet of the same type at same level in all rooms, except where otherwise noted.

23. Outlet boxes on metal studs shall be attached to metal hanger, tack welded or screwed to studs. Wood studs attachment shall be with wood screws, nails are not acceptable.

24. Recessed boxes shall not be mounted back-to-back in any wall or in offset shall be 2 inches.

25. Junction Boxes that do not contain an device shall be located in storage room, electrical closet, or a place accessible ceiling, not in hard lid ceiling or other form of inaccessible ceiling. Place boxes so that they be exposed to public view in a location approved by the Owner's Project Manager. Provide covers or plates to match adjacent surfaces as approved by the Owner's Project Manager.

26. Surface mounted wall boxes, terminal cabinet, junction box, panel board, etc., shall be attached to wall with appropriate screws, fasteners, backing plate, stud loc, etc., as detailed on architectural and/or structural drawings. If architectural and/or structural drawings are not provided on the project, Contractor shall provide all necessary mounting hardware and backing support to comply with local building code requirements and any additional requirements imposed by the local Authority Having Jurisdiction.

27. Sleeves shall be installed where conduit passes through a masonry or concrete wall and shall be 2 inches diameter galvanized steel no more than 1/2" greater in

The internal diameter of the conduit Entrance shall be increased vertically into a mildin, and shall be radiused equal to ten (10) times the conduit diameter, under round corner connection and mildin interconnect conduit 3 inch or larger shall have a minimum 12'6" radius or curvature of the inner edge. For the perin tiltie, radiused end shall be made per their reflective specification

37) Take all the conditions at each access point and put a permanent tag identifying the purpose of the condition, footcandle level, and the location of the other end. In wet, corrosive outdoor or underground location, use brass, bronze, or copper tags as required to condition it or larger galvanized wire. In cribs on the tag, it will feel concave, clear and complete identifying information.

3 The following additional requirements shall apply to underground conditions

- a) Underground conduit shall be Schedule 40 PVC Unbonded Chloride Resistant of the size indicated elsewhere in the specification or as required per CEC Article 703.
- b) For all communication conduit 2" and larger and feeder 400A or greater, provide it with a minimum 3" inc., 2,000 LB concrete encasement, 2" inc. minimum separation between conduit, installed at depth of not less than 2' below grade. Provide concrete encasement and/or greater minimum conduit depth as required for the utility Company. Conduit separation within a duct can be maintained in a plastic spacer located at 18" intervals. Where power and communication conduit are run in a common trench, a 2" inc. minimum separation shall be maintained between power and communication conduit or as required for the utility Company. Where concrete encasement is not required for the utility for a utility only duct can, provide free draining and bedding suitable to achieve the relative compaction based on ASTM D1557 using 6" lifts or directed fill utility Company Standard.
- c) In all cases, where an underground cable is under a building slab or footing, the electrical Contractor will provide a Bentonite clay or concrete barrier that conforms to the width and depth of the trench excavation extending a minimum of 24" on either side of the foundation. In all cases, where conduit is under a floor in a footing or other foundation element, the electrical Contractor will provide a Bentonite clay or concrete barrier between the floor and the conduit for the entire depth of the floor. The barrier is required to prevent passage of moisture under or through the slab or footing via the trench or floor.
- d) Where underground conduit is under a building slab, concrete encasement is not required, except as required above, contact the Engineer for written direction prior to obtaining an encasement.
- e) Underground conduit, whether inside building or below grade, shall be in a safe level, or shall be so that water will not flow into interior building space, shall be sealed at the point of penetration with a good quality conduit seal. Liner Seal or equal or Ro-Stop or Conduit/conduit sealing material. Penetration of water through the frame/pipe on entering the structure shall be completely restored as required to maintain the frame/pipe manufacturer and installer warrant for the installation. All conduit shall be provided with a good close attachment to building. All conduit shall be installed such that the water cannot accumulate in the conduit and

resistance rated concrete floor and ceiling resistance ratings are indicated elsewhere in the project plan. ENT shall comply with CEC Article 322.

- d. All ENT fittings and ENT boxes shall be concrete-filled listed fittings of type. Additionally, ENT fittings shall be constructed of rigid PVC and able to resist ENT conduit pull out force of a minimum of 700 lbs. ENT fittings shall be able to locate tabs for ENT connection shall utilize manufacturer approved and additional protection from fitting/conduit separation. ENT conduit to rigid conduit transition fittings shall be embedded into the concrete fitting on the rigid conduit side of the fitting. ENT to metal box fittings shall be embedded into a threaded end and located after.
- e. Where transition enters a box, fitting, or other enclosure provide a minimum or adapter to protect conductor from abrasion while the box, fitting, or enclosure design provides equivalent protection.
- f. ENT junction boxes shall be race rated inlets and shall be rated to support listed fixture weight inlets less than 10 lbs.
- g. Concrete filled metal boxes shall be used to support pendant and fixture or fixture over 10 lbs.
- h. ENT shall be provided in continuous length between junction boxes without use of inline splice or connector and shall be clearly marked/labeled at least every 10 feet.
- i. All ENT conduit containing electrical branch circuit shall contain a code listed equipment ground conductor.
- j. ENT shall transition to EMT, IMC, RMC, or rigid PVC, as appropriate or as called out elsewhere in the specification, for all embedded conduit within/on/under a building structure.
- k. ENT shall transition to appropriately listed PVC expansion joints at all structure expansion or seismic joints.
- l. ENT shall be secured/fastened and supported every 2 – 3 feet and within 1 ft of every junction box and fitting to prevent movement and sag.
- m. ENT shall be routed straight without sag, or excessive bending. Where bends are required, comply with Table 322.2 of the CEC for minimum radius of bend. Number of bends shall not exceed quantity allowed by code. Bends shall be for power and lighting branch circuit and/or feeder conductors. Bends utilized for communication, data, or other conductors, data cabling, etc. Number of bends shall not exceed the equivalent of 200 degree bend. Conduit length no more than 100 feet without installation of a TIA compliant pull box.
- n. Separation of ENT from fittings, electrical race, or deflection in ENT runs that prevent pulling of wire and other ENT shall be corrected by a continuous and catching a necessary at no additional cost to the Owner. Use of surface mounted conduit and junction boxes as a repair method is unacceptable.
- o. EMT ENT runs shall be provided with a non-drain trap.
- p. Coordinate installation of raceway with structural steel and other structural members. Do not cut, notch or otherwise alter structural members without obtaining approval in writing from the Structural Engineer of record.
- q. No more than 2 3/4" ENT conduits may cross each other within a horizontal concrete slab without obtaining approval in writing from the Structural Engineer of record.

B. Installation of 200 Volt Conductor

1. All electrical wire, including internal circuitry, shall be installed in conduit
 2. All circuit and feeder wire for all lighting shall be continuous from over current protective device or switch to terminal or final outlet. No joints shall be made except in pull, junction or outlet boxes, or in panel or switchboard enclosure
 a. Utilize reinforced "inched" wiring type connector, 3M Co can "Performance Plus" CO/B or R/Y or equal as required for splice and tap in conduit. All A/G and smaller shall use a wiring connector listed in an Underwriters Laboratories or UL listed directory, utilize a 3M Co can Scotchcast 307G epoxy resin connector sealing each to seal the wiring connector. THE USE OF PUSHWIRE CONNECTORS (e.g. "WAGO" OR EQUIVALENT) IS STRICTLY PROHIBITED
 b. Wire all A/G and larger A/G shall be joined together as follows
 i. When located in an underground environment or when subject to moisture, the splice shall be made with compression connector and sealed with a 3M, or equal, PST cold wiring connector inulator
 ii. When located in an interior environment, the splice shall be made with an insulated or equal dual rated, insulated splice rated for connector or identified for the wire 75/90 degree Celsius rated conductor
 c. Connection to other shall be made with dual rated connector/aluminum one piece compression listed. Paralleled conductor connection shall be mechanical listed
 3. Thoroughly clean all conduit and wire and see that all parts are perfectly dry before pulling in wire
 i. Install all armored fixture wire from all lighting fixture into the conduit into fixture outlet or junction box
 ii. For 20A branch circuit wiring, increase to 2 conductor to 3 for 20 volt circuit longer than 100 feet and for 277V circuit longer than 100 feet
 iii. Conductor Support Provide conductor support as required by code and recommended cable manufacturer. Where required, provide cable support in vertical conduit and provide lower end of conduit with a ventilator

00. Motor Connect the ground conductor to the conductor with an approved
 grounding system, and to the metal frame with a bolted solderless Bolt,
 screw and washer. All the ground or cable shall be labeled.
01. Building Grounding The resistance to ground shall not exceed 2 ohms. The
 contractor is noted and shall be confirmed.
- D. Line Voltage and Low Voltage Power Supply to all Mechanical Equipment Including
 Piping, Heating and Air Conditioning Unit
00. An electric power supply, including conductor, an enclosure, junction and/or outlet
 box and conductor and connection shall be furnished and installed by the
 Contractor for each item or mechanical equipment.
2. Power supply to individual items of equipment shall be terminated in a suitable
 outlet or junction box adjacent to the respective item of equipment, or a junction
 box provided by the manufacturer or the equipment and directed by the
 Mechanical Contractor. Allow sufficient length of conductor at each location to
 permit connection to the individual equipment without creating the wire run.
3. The location of all conductor termination to the equipment is approved. The
 exact location of the conductor termination shall be located and installed as
 directed by the Mechanical and Piping Contractor.
00. Provide power supply to all piping and mechanical equipment, including but
 not limited to, equipment furnished and installed by Owner or Contractor such as
 heating and air conditioning equipment, pumps, boiler, auto valve, water
 cooler, transformer, etc. The installation shall produce a complete and operable
 system.
00. Unless otherwise noted, the Contractor shall furnish and install all conductor, cable,
 wire, etc. for line voltage wiring and low voltage wiring.
00. It is the Contractor's responsibility to verify with the drafter of other trades
 regarding the extent of wire required for mechanical equipment. The bid shall
 include a 10% allowance to cover the cost of the installation.
7. The location of all power supply connection and/or termination to the
 mechanical equipment is approved. The exact location of the termination
 shall be verified with other trades during construction.
- E. Prefabricated Equipment Installation of all prefabricated items and equipment shall
 conform to the requirements of the manufacturer's specification and installation
 instructions. As noted, where code requirements affect installation of material and
 equipment, the more stringent requirements, code or manufacturer's instructions
 and/or specification, shall govern the work.
- F. Fire Protection
00. The Contractor shall be responsible for furnishing all material, labor, equipment,
 and service in connection with the selection and installation of a complete, full

2. Each fire door assembly shall have an "F" and/or "T" rating as required for each condition requiring fire door in. Each fire door assembly shall have a current UL listing, as indicated in the latest edition of the UL Fire Resistance Directory. Contractor shall verify acceptance of all fire door in method and type selection with the authority having jurisdiction prior to installation. The Contractor shall install each fire door assembly in accordance with the manufacturer's printed instructions.

3. Each fire door assembly shall be labeled with fire door manufacturer's furnished label on each side of the fire door in type of detection, etc.

General Electrical Specification

SECTION 27 10 00

TELECOMMUNICATIONS SPECIFICATIONS

PART 1 – GENERAL

1.1 INTRODUCTION

- A. The following specifications are intended to assist in the development of a telecommunications system for accommodating present and future technologies within the Lodi Unified School District. They provide a set of instructions and materials needed to install a telecommunications system within parameters set by industry standards. The requirements for the structured cabling systems within the facilities are continued in this document.

1.2 WORK INCLUDED

- A. Contractor shall design and provide all materials in order to install a complete and functional data/telecommunications and cable television infrastructure.
- B. Only ONE Contractor shall be responsible for providing a complete and functional infrastructure, including necessary components and documentation.
- C. Documentation will include MS Visio drawings showing room drop locations, cable runs, and conduit pathways. Data, voice, and coax cables are all part of the same infrastructure and shall all be installed, terminated, labeled, and documented by only one contractor (no exceptions).

1.3 CONTRACTOR QUALIFICATIONS

- A. Must possess a valid C-7 California State contractor's license. This license must have been issued 2 years prior to the date of the bid. No other license classification is acceptable.
- B. Must be able to prove to the satisfaction of LUSD that they have significant experience in the installation of fiber optic systems.
 - 1. Proper installation of fiber optic cable
 - 2. Fiber termination
 - 3. Interconnecting equipment
 - 4. Test procedures with appropriate documentation.
- C. Must prove employees have been trained in the proper handling and cleanup of small quantities of lead paint. Contractor must contact Technology Services, prior to any work starting for an updated list of sites that require drilling work to be handled by a dedicated asbestos vendor. In the event Contractor encounters asbestos, stop work and notify district.

- D. Must be in trade of installing telecommunication systems, continuously, for a period of at least 3 years prior to the date of this bid.
- E. Must submit at least one project reference for each of the three years prior to the date of this bid.
- F. Must provide a minimum of 3 references supporting a claim of experience for a similar project within 2 years prior to this bid. These project references shall contain the starting and ending contract price, the project foreman or superintendent's name, and the name, address, and telephone number of a project contact.
- G. Must also provide a list of key installation personnel, their hire dates and a resume of their experience. Key installation personnel shall include at least one foreman and two journey level installers or technicians. By submitting the names of these personnel, contractor is committing them to the execution of the project outlined in this specification.

1.4 REQUIREMENTS

- A. Drawings and General Provisions of the contract, including General and Supplementary Conditions and Division 1 Specifications Sections shall apply to work specified, in this Section.
- B. Rules and Regulations
 - 1. All work and materials shall be in full accordance with the latest rules and regulations of the following:
 - a. EIA/TIA Standards
 - b. BICSI Standards
 - c. CEC Standards
 - d. Title 24 (California Code of Regulation)
 - e. All Local Codes
 - f. LUSD Standards
 - g. NFPA Standards
 - h. ADA Requirements
 - i. Safety, Health and Environmental Standards
- C. Permits, Fees, and Inspections
 - 1. Contractor shall be responsible for all fees and permits required to any governmental agency having jurisdiction over the work of this section. Contractor shall arrange inspections required by any local ordinances during construction. Upon completion of the work, satisfactory evidence shall be furnished to LUSD to show that all work has been installed in accordance with the code(s).
- D. Examination of Site
 - 1. Contractor shall be held to have visited the site and been satisfied with the conditions under which the work is to be performed. Contractor shall check existing conditions that may affect the work. If the contractor retains services of other firms, those firms shall investigate existing systems and determine labor

and other materials required to add devices or modify systems. No allowance shall subsequently be made on the contractor's behalf, for any extra expense resulting from a failure or neglect to discover conditions affecting the work.

E. Cleaning and Cleanup

1. All work areas shall be cleaned to remove all dust, dirt, grease, paint, or other marks. All electrical equipment shall be left in a clean condition inside and out, satisfactory to LUSD. Buildings and premises will be kept free from accumulated waste materials, rubbish and debris resulting from work. Upon completion of work: tools, appliances, surplus and waste materials, rubbish and/or debris will be removed and/or legally disposed of offsite.

F. Interruption of Services

1. The underground route may run through areas of existing underground irrigation, signal, power, gas, water and sewer.
2. Contractor must take precautions to avoid damaging/killing the root systems of existing trees. Contractor shall hand-dig as necessary to prevent disruption to existing systems, and make all repairs as required if damage occurred, at no additional cost to LUSD.
3. LUSD will make every effort to assist contractor in locating existing underground routes. However, contractor will be required to pothole and inspect as needed. Contractor is responsible for USA surveys (Underground Service Alert).
4. Power and signal services to existing buildings and related circuits are to remain in operation and shall not be interrupted, except by specific written approval from LUSD.
5. If it is deemed necessary to shutdown circuits for the installation of new work, such shutdowns shall be scheduled with LUSD who may at its choosing, have a representative present during shutdown. Shutdowns shall be scheduled "after hours" or on weekends when an interruption would not cause a disturbance to school activities. Any accidental interruption of service to circuits or equipment as a result of work performed by the contractor shall be restored immediately in a manner acceptable to LUSD, at the contractor's expense.

G. Cooperation and Coordination

1. Contractor shall be solely responsible for instituting and maintaining safe working conditions for the project area under construction. Noise, dust, and other nuisance control measures will be implemented as effectively as possible. Work will be executed at a time when the space required by this installation is accessible. Adequate barrier and trench covers will be provided, and no equipment will be left unattended, ensuring the safety of students and staff.

H. Inspection

1. Contractor shall cooperate with the LUSD Designer/Inspector and provide assistance at all times for inspection of the work performed under this contract.

Work that will be contained behind or under access covers, ground covering, or similar impediments shall be left exposed until inspected by LUSD. Contractor shall remove covers, operate devices, or perform any reasonable work that, in the opinion of LUSD, will be necessary to determine the quality and adequacy of the work.

I. Manufacturers Direction

1. Contractor shall follow manufacturer's directions that cover points not included in the drawings or specifications.

J. Workmanship

1. Contractor shall take all precautions necessary to protect existing structures. Structures or items to remain that are damaged during the course of work, shall be repaired or replaced by the contractor. Good workmanship shall be evident by the proper installation of all materials and equipment. Equipment shall be level, plumb and true with the structure and other equipment. All materials shall be firmly secured in place, adequately supported and permanent.

K. Contractor's Supervision

1. Contractor shall personally, or through an authorized and competent representative, constantly supervise the work from its commencement to its completion and acceptance. Contractor shall have the same foreman and workers on the job from its commencement to its completion, as much as possible. LUSD shall be notified of any personnel changes and supplied with the proper documents for any new personnel (i.e. lead certificates). All non-LUSD personnel shall be identified either by an ID tag or uniform with a company logo when on school grounds.

L. Scheduling of Work

1. Due to its nature, this work will have to proceed with a definite sequence of operations to minimize outages and continue facilities to all areas. The site will remain in operation during the work, and the contractor shall make every effort to maintain required services.

M. Guarantees

1. Acceptance of the contract for this work includes this guarantee: Contractor guarantees that he has performed the work in accordance with the contract documents. Contractor also agrees to replace or repair, as new, any defective work, materials, or parts which appears within 4 years of final payment. LUSD will make the final determination of whether any defects are the responsibility of the contractor to replace or repair.
2. Warranties, guarantees and certificates shall be provided for equipment and materials furnished and installed, as of the date of final payment and be delivered to LUSD. A set of "As Built" Visio drawings and test results for all installed cabling shall be provided to LUSD, before the project will be considered complete.

3. Panduit Pan-Net Performance Guarantee - Contractor shall provide a 25 year application performance warranty for all Panduit Pan-Net copper cable and connectivity products. The system must be installed to meet all TIA/EIA commercial building wiring standards and installed per appropriate Panduit instruction sheets. If any Panduit product fails to perform as stated above, Panduit will provide new components at no charge.

1.5 SUBMITTALS AND SUBSTITUTIONS

- A. LUSD has evaluated and approved all the approved items listed in the LUSD Parts List. Substitutions to this list are possible but must be approved before a bid is accepted. Substitutions must be submitted to LUSD 10 working days before a bid is due and will either be approved or rejected 5 working days before a bid is due. The substitution documentation shall include the comparative specification listing for the approved product and the proposed product, including a complete listing of the characteristics of the equipment in the specification.
- B. Within 10 working days after the date of the award of the contract, contractor shall submit to 3 copies of a complete submission to LUSD for review. The submission shall consist of 5 major sections, with each section separated with index tabs:
 1. Section 1 shall be the Index, which will include the project title, address, name of the firm submitting the proposal and name of the architect. Each page in the submission shall be numbered chronologically and summarized in the index.
 2. Section 2 shall include a copy of the contractor's valid C-7 California State Contractor's License, documentation outlined in Section 1.02 and a list of instrumentation to be used for system testing.
 3. Section 3 shall contain the pre-approved substitution submittal and the written approval from LUSD. If no substitutions are planned, it will be noted in this section as well.
 4. Section 4 shall contain samples of proposed cable markers and labeling.
 5. Section 5 shall contain a complete and detailed satellite cable count, workstation count, bill-of-materials and Visio drawing showing proposed work ("As Planned"). Any contractor failing to include all of the required information shall be deemed non-responsive and may be disqualified, at the discretion of LUSD.

PART 2 – PRODUCTS AND PROCEDURES

2.1 APPROVED LUSD PARTS LIST

- A. An approved parts list is detailed in District Telecommunications Standards V4. Preferred education pricing provided for this list is available through Anixter Inc. (1-800-ANIXTER, reference Lodi Unified). All products must be selected from the "LUSD Parts List," unless substitutions have been approved by LUSD.

2.2 LABELING

- A. Shall follow the "LUSD Labeling Format" specified in District Telecommunications Standards V4, with the exception of workstation cables (i.e. patch cords).
- B. Shall never be hand-written.
- C. Shall be machine printed on clear or opaque tape, stenciled onto adhesive labels, or type written onto adhesive labels.
- D. Shall have font that is at least 1/8" in height, block characters, and legible.
- E. Shall have text that is of a color contrasting with the label so that it may be easily read. If labeling tape is utilized, the font color shall contrast with the background.
- F. Patch panels shall exhibit workstation numbers, in a sequential order, for all workstations served by the MDF or IDF.
- G. Shall be completed before testing commences. Labeling discrepancies found during inspection will void all test results.

2.3 COPPER BACKBONE CABLE

- A. Description: The backbone cabling used to connect all IDF's to the MDF, used for voice/data.
 - 1. Shall be Category 5e and installation must be in compliance with all EIA/TIA standards.
 - 2. The number of available wire pairs to each IDF must account for a minimum of 2 pairs per classroom. A minimum of 25 pairs of cable shall be used to any building encompassing an office. Each pathway, upon the population of cable, shall have enough wire pairs to accommodate all existing and future IDF's in that pathway's route.
 - 3. Cable must be rated for the environment that it will be installed in, such as plenum, riser or outdoor rated.
 - 4. Only Cat 5e 110 punch blocks will be allowed for terminations. Backbone pairs shall be terminated at the top left of the blocks installed in the IDF.
 - 5. Each copper backbone cable shall be machine labeled and printed EIA/TIA 606 Section 8 compliant at each end with its respective IDF number/letter. All binder groups shall be tied off with their respective identifying ribbon at every breakout point.

2.4 WIFI CABLE

- A. Description: Cabling between Wi-Fi jacks and IDF/MDF's.
 - 1. Shall be blue Category 6A - 802.3bt Type 4 and installation must be in compliance with all EIA/TIA standards.

2. Each blue cable shall be terminated at both ends with white Panduit Cat 6A RJ45 jacks.
3. Panduit Executive style faceplate shall be used at access point location.
4. Wireless access points shall be in every classroom, common areas, and exterior for full campus coverage.

2.5 WORKSTATION CABLE

A. Description: Cabling between workstations and IDF/MDF's.

1. Installation must be in compliance with all EIA/TIA standards.
2. Each standard classroom must have a minimum of three workstations:
 - a. Each workstation shall consist of 2 purple Cat 6A cables and 1 grey Cat 6A cable.
 - b. Workstations shall be disbursed around the room and not within 10 feet of the main door.
 - c. Each purple cable shall be terminated at both ends with a beige Panduit Cat 6A RJ45 jacks.
 - d. Each gray cable shall be terminated, with slack loop at IDF/MDF location with a Cat 6A Blue RJ45 for VOIP and 110 punch block for non-VOIP. District will identify where to use VOIP and where to non-VOIP. Workstation terminates with a Blue Panduit Cat 6A RJ45 jack for Voip and a Cat6A Black RJ45 for non-VOIP.
3. Panduit LDP series or Panduit T-70 series (both Cat 6A compliant) raceway shall be used on interior walls where raceway is required for station drops. Panduit T - 70 shall be used for computer labs and have access points every 5 feet (an access point shall consist of one duplex outlet 110 VAC receptacle and two beige Cat 6A data jacks).
4. Copper station cabling may run outside of conduits and above T-Bar suspended ceilings when available. Cables installed in this fashion must follow these guidelines:
 - a. Run horizontally in bundles and tie down neatly without the use of zip-ties.
 - b. Be well clear of any light fixtures or other electrical appliances that may affect data transmissions.
 - c. Have their own support system, such as J-Hooks or a cable tray.
 - d. Cable tray shall be a minimum of 12"x4" wire mesh and UL listed.
 - e. Cannot be supported by other items in the ceiling such as conduit, ducts and ceiling grids.

2.6 INTERCOM CABLE

- A. Description: Cabling between Intercom Speakers/Horns and IDF/MDF's.
- B. Green Cat6A cable shall be used for new IDF's/buildings.

C. Indoor Speakers:

1. Indoor speakers shall have a Green Jack at the patch panel and at designated indoor speaker locations using a Panduit executive faceplate.
2. Locations shall be 18 inches away from Access Points , 4 inches below ceiling, and 4 feet away from HVAC vents.

D. Outdoor Horns:

1. Shall have a green Jack at the patch panel and a Panduit Field Terminable RJ45 plug in a dual gang double-deep weatherproof bell box.
2. Bell boxes shall be 4 inches away from ceilings, soffits, other devices, etc. and be protected with a wire cage, allowing protected interior space of 14 (h) x 14 (w) x 16 (d) or more. Note: Outdoor horns should be used in gyms, locker rooms, multi-purpose rooms, and other noisy areas.

2.7 ACCESS CONTROL AND CAMERAS

A. Description: Cabling between cameras or access control devices and IDF/MDF's.

1. Yellow Cat6A cable shall be used with yellow jacks.
2. Access Control:
 - a. Shall be terminated with a yellow jack at each end of cable.
3. Cameras:
 - a. Camera location shall be terminated with a Panduit Field Terminable RJ45 plug in a flush mount four square box w/ a single gang mud ring or an 8x8 weather tight NEMA rated box with screw on lid.
 - b. Cameras should be mounted in locations shielded from the sun when possible.

2.8 PROMETHEAN BOARDS/LCD DISPLAYS

A. Description: Cabling between Promethean Boards/Displays and IDF/MDF's.

1. Purple Cat6A cable shall be used with a beige jack.
 - a. Beige jack shall be mounted in a Panduit Executive faceplate, located 29 inches below the ceiling, directly above the display (unless specified otherwise).
 - b. HDMI receptacle/faceplate shall also be mounted below the display, 14 inches above the floor, and terminate with an HDMI cable coiled behind the display.

2.9 FIBER INNERDUCT

- A. Description: Ducting specifically manufactured to enclose and protect fiber optic cable.
 - 1. Must be used for all fiber installations, with exceptions where conduits are too small to run inner duct.
 - 2. LUSD will be notified, in writing, that conduits might be too small to run inner duct. LUSD must approve, in writing, any fiber run not in inner duct.

2.10 FIBER DISTRIBUTION

- A. Description: The backbone cabling used to connect all IDF's to the MDF.
 - 1. Only 50 um-multimode fiber (OM4) shall be used and installation must comply with all EIA/TIA standards.
 - 2. Singlemode fiber (OS2) shall be used as needed due to distances.
 - 3. Only 62.5/125 um-multimode fiber shall be used for fire alarm applications.
 - 4. A minimum of 12-strand fiber shall be used from the IDF's to the MDF.
 - 5. Each fiber cable shall homerun from the IDF's to the MDF without the use of interconnects.
 - 6. Each pathway, upon the population of fiber, shall have enough fibers to accommodate all existing and future IDF's in that pathway route, and also be accompanied by a coax cable.
 - 7. SC style connectors shall be used for all fiber termination.
 - 8. All fiber strands shall be terminated and labeled at both ends with its respective IDF identifier.
 - 9. All fiber interconnect devices shall be labeled with their respective IDF identifier.
 - 10. At each location where the fiber cable is exposed to human intrusion, it shall be marked with warning tags. These tags shall be yellow or orange in color, and shall contain the warning: "CAUTION FIBER OPTIC CABLE." The text shall be black, block characters and at least 3/16" high. A warning tag shall be permanently affixed to each exposed cable or bundle of cables.

2.11 MAIN DISTRIBUTION FACILITY (MDF)

- A. Description: A location within a building or complex of buildings, where the entire telecommunications system originates. EIA/TIA-569 standards refer to the room housing the MDF as the "Equipment Room."
 - 1. Must be in compliance with all EIA/TIA standards.
 - 2. Must have fire treated 3/4" plywood on all walls.

3. Must have (1) 4-post rack and (2) 2-post racks in secured dedicated rooms.
4. Cabinets must have a dedicated power outlet mounted inside.
5. Cabinet shall be load tested with no less than 200 pounds and up to rated shear strength.
6. Ladder racking must be mounted on the perimeter of all walls and above cabinets.
7. A Panduit wire manager must be mounted in-between every patch panel (must use one wire management panel for every patch panel).
8. A 3-foot slack loop shall be required at MDF for all cables.
9. MDF room sizing:
 - a. High School – 15'x10'
 - b. Middle School – 10'x8'
 - c. Elementary School – 9'x8'

2.12 INTERMEDIATE DISTRIBUTION FACILITY (IDF)

- A. Description: A location in a building that interconnects and manages the telecommunications wiring between the MDF and workstation devices.
 1. Must be in compliance with all EIA/TIA standards.
 2. Must have fire treated 3/4" plywood on all walls.
 3. Cabinets must have a dedicated power outlet mounted inside.
 4. Must have (2) lockable 90" tall, 19-inch / 40 RU, front and rear swing cabinets in unsecured locations.
 5. Must have (2) 2-post racks in secured dedicated rooms.
 6. Cabinet shall be load tested with no less than 200 pounds and up to rated shear strength.
 7. Ladder racking must be mounted on the perimeter of all walls and above cabinets.
 8. Cabinets must adhere to ADA requirements. See Enclosure G in the District's Telecommunications Standards V4 document.
 9. A Panduit wire manager must be mounted in-between every patch panel (must use one wire management panel for every patch panel).
 10. A 3-foot slack loop shall be required at IDF for all cables.

2.13 BACKBOARD

- A. Description: Generally, refers to the plywood sheeting lining the walls of telecommunications facilities. Backboard may also refer to the entire wall-mounted assembly including wire management, wiring blocks, and equipment cabinets.

1. Must have fire treated 3/4" plywood on all walls.
2. Dimensions shall be no larger than the cabinet/IDF when installed in a classroom.
3. Shall be fastened to two separate wall studs with 4 lag bolts.
4. Shall be no thinner than 5/8."

2.14 GROUNDING AND BONDING

- A. Description: Generally, refers to the grounding and bonding requirements for telecommunications rooms, including data cabinets, racks, and ladder racking systems. Strictly adhere to all Building Industry Consulting Service International (BICSI), Telecommunications Industry Association (TIA) recommended installation, best practices, codes, and standards when installing the grounding and telecommunications bonding infrastructure.

1. Telecommunications Main Grounding Busbar (TMGB) shall be located in the MDF: busbar placed in convenient and accessible location and bonded by means of bonding conductor for telecommunications to building service equipment (power) ground.
 - a. Telecommunications Main Grounding Busbar (TMGB) shall be constructed of .25" (6.4 mm) thick solid copper bar. The busbar shall be 4" (100 mm) high and 20" (510 mm) long and shall have 30 attachment points (two rows of 15 each) for two-hole grounding lugs. The hole pattern for attaching grounding lugs shall meet the requirements of ANSI-J-STD – 607-A and shall accept 27 lugs with 5/8" (15.8 mm) hole centers and 3 lugs with 1" (25.4 mm) hole centers. The busbar shall include wall-mount stand-off brackets, assembly screws and insulators creating a 4" (100 mm) standoff from the wall. The busbar shall be UL Listed as grounding and bonding equipment.
2. Telecommunications Grounding Busbar (TGB) shall be located in the IDF: interface to building telecommunications grounding system generally located in telecommunications room. Common point of connection for telecommunications system and equipment bonding to ground, and located in telecommunications room or equipment room.
 - a. Telecommunications Grounding Busbar (TGB) shall be constructed of .25" (6.4 mm) thick solid copper bar. The busbar shall be 2" (50 mm) high and 12" (300 mm) long and shall have 9 attachment points (one row) for two-hole grounding lugs. The hole pattern for attaching grounding lugs shall meet the requirements of ANSI-J-STD – 607-A and shall accept 6 lugs with 5/8" (15.8 mm) hole centers and 3 lugs with 1" (25.4 mm) hole centers. The busbar shall include wall-mount stand-off brackets, assembly screws and insulators

creating a 4" (100 mm) standoff from the wall. The busbar shall be UL Listed as grounding and bonding equipment.

2.15 TESTING AND DOCUMENTATION

- A. Testing: Contractor shall test each fiber strand and each pair of twisted pair copper cable after labeling is 100% complete. LUSD reserves the right to have a representative present during testing.
 - 1. Fiber Optics Cable: Each strand shall undergo bi-directional testing for signal attenuation losses.
 - a. Test Equipment:
 - 1) Multi-mode: Fluke DSP 4000 for equivalent.
 - 2) Single-mode: Laser Precision TD2000 OTDR with appropriate modules, or equivalent.
 - b. Tests:
 - 1) Multi-mode: Bi-directional signal attenuation at 850 and 1300 nm.
 - 2) Single-mode: Bi-directional signal attenuation at 1310 and 1550 nm.
 - c. Test Criteria:
 - 1) Signal loss less than the link loss budget as determined by the tables below.

Multi Mode Cable

SC Connector Pair 0.5dB

Wavelength: 850 nm, Maximum Attenuation 3.5 dB/km

Wavelength: 1300 nm, Maximum Attenuation 1.5 dB/km

Example: A link with 3 connectors and a total length of 500m should have a maximum attenuation of 3.25dB at 850nm and 2.25dB at 1300nm

Single Mode Cable

SC Connector Pair 0.5dB

Wavelength: 850 nm, Maximum Attenuation 1.0 dB/km

Wavelength: 1300 nm, Maximum Attenuation 1.0 dB/km

- B. Workstation Cable: Each workstation cable shall be tested from the Jack Panel to the data outlet after labeling is completed.
 - 1. Test Equipment: Fluke DSP-4000 or equivalent.
 - 2. Tests: Conform to EIA/TIA Standards for Category 6A.

3. Test Criteria: Tested to Category 6A for permanent link compliance.
- C. Wi-Fi Cable: Each Wi-Fi cable shall be tested from the Jack Panel to the data outlet after labeling is completed.
 1. Test Equipment: Fluke DSP-4000 or equivalent.
 2. Tests: Conform to EIA/TIA Standards for Category 6A and 802.3bt Type 4.
 3. Test Criteria: Tested to Category 6A for permanent link compliance.
- D. Documentation: Contractor shall provide documentation to include test results and Visio "As-Built" drawings in both soft and hard copy format.
 1. Fiber Test Results: Shall be entered onto the attached form "Fiber Test Results."
 - a. Only original signed copies will be acceptable.
 - b. Hand written results are not acceptable.
 - c. Copies of test results are not acceptable.
 - d. Test results shall be in PDF format.
 2. Workstation/Wi-Fi Test Results: Shall be provided in the form of printouts from the test equipment, as well as computer file copies on CD including the software needed to read the results.
 - a. Only original signed copies will be acceptable.
 - b. Hand written results are not acceptable.
 - c. Copies of test results are not acceptable.
 - d. Test results shall be in PDF format.
 3. As-Built Drawings: Contractor shall produce drawings while adhering to the following guidelines:
 - a. Always use icons from the Visio stencils provided by LUSD.
 - b. Depiction of backbone cable routing.
 - c. Locations of access points, card readers, distribution cabinets, intercoms, jacks, NVRs, security cameras and workstations.
 - 1) Active components between an end point and NVR/switch, must be documented (power injectors, switches/repeaters, hubs, etc.).
 - 2) Access Control components must have power sources identified.
 - 3) Jacks must be accompanied by a jack label.
 - 4) Nodes must be accompanied by an IP address.
 - 5) Submit before final inspection for punch list. Incorrect Visio drawings are punch list items and are to be corrected before re-inspection.
 - 6) Additional copies corresponding to the appropriate IDF/MDF, shall be posted in the MDF's and IDF's.

2.16 ACCEPTANCE

- A. Acceptance of the Data Communications System, by LUSD, shall be based on the results of testing, functionality, and the receipt of documentation.

1. With regard to testing, all fiber segments and workstation data cables must meet the testing criteria established in Section 2.12 above.
2. With regard to functionality, contractor must demonstrate to LUSD that Gigabit Ethernet data signals can be successfully transmitted bi-directionally, from the MDF/IDF to and from a number of individual data outlets.
 - a. No more than 5% of the data jacks will be tested.
 - 1) If any locations fail, an additional 5% will be tested until no more links fail.
3. With regard to documentation, all required documentation shall be submitted to LUSD

PART 3 – EXECUTION

3.1 DIVISION OF WORK

- A. Contractor shall design and install the data communications system as described in the preceding documentation. Installation shall result in a functional system. The scope of work shall include:
 1. All necessary conduit and raceway with a Visio drawing showing proposed cable routes, existing conduit to be used, new conduit being installed, equipment racks and approximate drop location. (Note: The EIA/TIA specifies at least 2 drops per workstation location, back to the IDF/MDF).
 2. Necessary trenching, backfill, replacement of landscape material, repair of damage to utilities or structures, replacement of asphalt and base, and replacement or repair to concrete work resulting from conduit or raceway installation.
 3. Provide and install all equipment.
 4. Test and document system upon completion. Copies of all other forms and enclosures shall be included.
 5. Supply and install all necessary materials resulting in a safe, complete and functional system. The scope of work shall be reviewed by no less than 1 person for completeness from the following departments: Facilities & Planning, Maintenance & Operations.

PART 4 – CONDUIT

4.1 UNDERGROUND

- A. Contractor will use PVC schedule 40 underground, with rigid 90-degree elbows and tracer tape placed 6" to 12" over the top of the PVC portions. Elbows shall have a radius of at least 10 times the diameter of the conduit used.

- B. See CEC for appropriate depths and pull box sizes.
- C. Should be next to existing underground where possible.
- D. All new underground conduits shall be (2) 4" plus (1) 4" spare, PVC to support data/voice/intercom/PA. All new underground conduits shall be 2" PVC to support fire alarm.
- E. Areas near tree roots and other underground utilities will need to be hand dug. LUSD will identify those areas. Pull boxes are to have traffic lid covers (that say Data). The bottom will be grooved with drains installed. LUSD will provide diagrams upon request.

4.2 ABOVEGROUND

- A. All roof penetrations shall be approved by LUSD, before actual penetration is made.
- B. All exterior conduit that is accessible shall be in rigid conduit.
- C. A pull rope will be installed in all new and existing conduits used, including underground and interior conduit.
- D. Firewall penetrations will extend through the wall a minimum of 12 inches.
 - 1. Shall be sealed around the outside with fire caulk.
 - 2. Shall be sealed around the inside with fire caulk duct seal (the depth shall be 50% diameter of the conduit).
 - 3. No innerduct shall be installed in a firewall penetration.
- E. Conduit size to be determined by EIA/TIA Standards leaving room for future expansion.
- F. EMT conduit shall be used in the following interior areas:
 - 1. Gyms
 - 2. Multi-Purpose rooms
 - 3. Industrial Arts buildings
- G. LB's shall not be used in new and existing conduit for data applications.
- H. Data/Voice conduits shall service LUSD's voice and managed IP network only.

4.3 PORTABLE CLASSROOMS

- A. All conduits to be installed on the exterior of a portable will be approved by LUSD personnel before installation.
- B. The center beam of a portable shall not be penetrated.

PART 5 – CONCRETE

- 5.1 ALL concrete and asphalt repair shall be included in the scope of work and will be replaced from joint to joint (no patching, except when done temporarily for safety).
- 5.2 Soft patch may not be used as a permanent patch for asphalt or concrete.

PART 6 – CHANGE ORDERS

- 6.1 ALL change orders shall be routed to the department originating the project. Departments are typically Facilities & Planning and Technology Services and will be approved or disapproved on a case by case basis.
- 6.2 Approved change order form will be added to the scope of work and completed as a part of the contract.

PART 7 – DEPARTURE AND SPECIFICATIONS

- 7.1 During unusual or unique situations, a departure from specifications (DFS) may be granted for specific locations and/or equipment. Approval is granted or denied in writing by Technology Services. See section 1.05 for materials substitutions.
- 7.2 The contractor will keep all forms on file until the warranty on the installation expires.

PART 8 – ASBESTOS AND LEAD CONTAINING PAINT WAIVER

- 8.1 Asbestos work must be performed by M&O approved certified remediation company. Contractor must contact LUSD's Maintenance and Operations (M&O) department for a current list of Asbestos Hazard Emergency Response Act (AHERA) sites, requiring work to be performed by a remediation company.
- 8.2 All District sites will be considered to be a lead containing paint facility unless the area of work has been sampled and determined to be otherwise. All work including but not limited to cutting and/or hole drilling will be performed by a lead awareness trained individual that is also trained in HW collection and disposal activities. Otherwise the contractor must employ the services of an environmental company approved by M&O and certified to perform these duties. All environmental activity will be reported to the Maintenance & Operation Structural Supervisor at (209) 331-7193 prior to the commencement of work.

PART 9 – ACCESS CONTROL & VIDEO SAFETY

9.1 INTRODUCTION

- A. In addition to LUSD Infrastructure Wiring Specifications, the following guidelines apply to access control card readers, security cameras, and other access devices installed within LUSD.
- B. A site walk must also be performed with a Technology Services staff member before work begins.

9.2 JAESC/TRANSPORTATION/WAREHOUSE SPECIFIC GUIDELINES

- A. Access control devices and security cameras will be:
 - 1. Connected directly on the LUSD network.
 - a. Operations, VLAN 99.
 - 2. Powered by LUSD POE switches.
- B. All access control nodes should be fed from the MDF, when the run is within EIA/TIA specifications.
- C. NVR will be housed in the Data Center and rack mounted.

9.3 SCHOOL SITE SPECIFIC GUIDELINES

- A. Access control card readers and other access devices will be:
 - 1. Connected directly on the LUSD network.
 - a. Operations, VLAN 99.
 - 2. Powered by LUSD POE switches.
- B. Security cameras will be placed on their own private network.
- C. The installation location of the NVR is to be coordinated with Technology Services. Ideally, the NVR will be installed in the MDF where security and environmental conditions are monitored.
 - 1. NVR's are to have two NICs
 - a. One placed on the private network
 - b. The other on LUSD's Operations network.
- D. A maximum of 1 external (public network) viewing license/user, will be allowed for each site.

9.4 DISTRICT WIDE GUIDELINES

- A. Network Video Recorder (NVR), GateKeeper, and other full OS devices (Windows/Mac), will have the LUSD's Anti-Virus and LanRev agents installed on the systems. In addition, the device name and description are setup according to LUSD specifications.
- B. All power supplies shall be housed in a cabinet or communications closet.
- C. All cable runs shall be terminated at a jack, not a modular plug.
- D. No faceplate needed in ceiling jacks and utilize yellow patch cables.

- E. Contractor shall receive approval from LUSD before sharing any cabling pathways with existing LUSD infrastructure.
- F. Yellow Cat 6A cable shall be used for infrastructure cabling runs, terminated into yellow Panduit jacks.
- G. 19" Patch Panel required for all cabinets (both existing or new cabinets).
- H. Repeaters/switches used where a 90 meter run is exceeded, are to be located 5 feet from an existing MDF/IDF.
- I. All jacks shall be labeled in accordance with LUSD specifications.
- J. Technology Services Network Operations Center (NOC) shall be contacted before anything is patched into LUSD's network. The NOC will be able to verify connectivity and ensure there are no other issues.
 - 1. NOC can be reached at: (209) 331-8911.

9.5 DOCUMENTATION GUIDELINES

- A. Please see section 2.12 for cable testing and Visio drawing guidelines

9.6 POWER

- A. All cabinets will have a dedicated circuit/breaker and power sources must be mounted per CEC requirements. During the initial walk with Technology Services, power sources will be identified. If power source is not available, Technology Services will work with M&O to coordinate the installation of power source. Powering cabinets with extension cords is not permissible.
- B. Temporary Power
 - 1. If active components are not operating off a dedicated power outlet/source, then it needs to be noted on the drawing with building/location. All active components mounted in a cabinet must have a dedicated power outlet within the cabinet. Do not affix raceway to walls for temporary power/extension cords.

9.7 MISCELLANEOUS

- A. All wires must be labeled w/ wire-wrap style labels within 3 inches of the jacks.
- B. Jacks should be labeled and tested at both ends of each smallest segment according to Specifications. This type of passive cross connect is no longer allowed.
- C. As of July 1st, 2016, single gang boxes are not permitted in IDFs.
- D. Jacks are now placed in a 24 port patch panel, Panduit part #CP24BLY

PART 10 – PROMETHEAN BOARDS, DISPLAYS, & A/V PROJECTORS

10.1 MOUNTING GUIDELINES

- A. For new construction, DSA approved drawings on following pages must be observed by both architect and installer.
- B. DSA standards must be followed.
- C. Any non-standard mounts must be approved by F&P.
- D. All mounts must be tagged with contractor's name and date of installation. See DSA approved mounting documentation.
- E. HDMI cables mounted in raceway must be able to pass a clean digital signal, with an allowance for a standard quality user patch cable to span 35 feet.
 - 1. For example: If the user connects a 35-foot cable to the user interface/wall plate and the length of the infrastructure cable between the wall plate and the projector is 10 feet, then the total length of digital transmission is 45 feet; therefore, the installer must demonstrate that the infrastructure cable can deliver a clear picture while being extended with a 35-foot HDMI male-to-male patch cable. Sound must also be demonstrated through jacks in faceplates.
- F. User connection interface/wall plate will contain, one VGA, one HDMI, and one 1/8 stereo audio jack. Active faceplates will be used for VGA/HDMI connection.
- G. User connection interface/wall plate will contain one VGA, one HDMI, and one 1/8 stereo audio jack. Active faceplates will be used for VGA connection.
- H. Power will be installed high on the wall within two feet of the projector.

10.2 SHORT THROW PROJECTORS

- A. Mounted to a plate/backboard that spans two studs.
- B. Secured to wall studs with 4 lag bolts.
- C. Head clearance from bottom of projector must be a minimum of 78 inches from floor.
- D. All CAT6A network connections, AV connections, and power shall be installed behind the short throw wall mount bracket.
- E. The use of short throw projectors shall be determined per project, and with District approval.

10.3 CEILING MOUNT PROJECTORS

- A. For T-Bar Ceiling: Two drop ceiling T-bar rods must be attached to opposite corners of the T-bar projector mount panels.
- B. For Hard Lid Ceiling: Mount must be bolted to cross-members (or ceiling joist) with no less than two bolts and some additional mounting brackets.
- C. All CAT6A network connections, AV connections, and power shall be installed above the ceiling mount bracket.

- D. The use of ceiling mount projectors shall be determined per project, and with District approval.

10.4 PROMETHEAN BOARDS

- A. 75" wall mounted Promethean Boards shall be installed in all classrooms.
- B. Promethean Boards shall have adjustable mounts when used in Kindergarten through 6th grade classrooms.
- C. HMDI cabling shall be from Promethean Board to the teaching station with a CAT6A connection. An additional HMDI connections shall be installed directly below the board with a CAT6A connection.

10.5 MULTIPURPOSE ROOMS/GYMS

- A. Large assembly areas shall receive electric large format projection screens and lamp less ceiling mounted projectors. Refer to current District standards for current manufacture and model number.
- B. Large assembly areas shall have a dedicated AV cabinet to facilitate local presentations and house wireless microphones and AV amplifiers.
- C. Large assembly areas shall have separate sound systems.
- D. AV wall controls shall be based on Extron Electronics and control all AV in the space, with the capability to integrate lighting and shades.
- E. Sizing of screens, throw distance of projector, and locations shall be engineered by AV Contractor and approved by the District.

10.6 DSA MOUNTING DOCUMENTATION

- A. Refer to District Telecommunications standards V4 for Projector Anchor and Projector Mount details.

PART 11 – INTRUSION ALARM

11.1 SYSTEM

- A. The system is based on Ademco panels, keypads, and devices.
- B. No door contacts

11.2 TELCO INTERCONNECT

- A. Shall be clearly identified by the CSID noted on the keypad for each COM panel.
- B. Each new COM panel shall have a dedicated Measured Business Line.
- C. 3-pair 66 block style biscuit-blocks are preferred at point of termination for COM panel phone lines (No RJ31X's).

- D. LUSD will only test Measured Business Line to 66 block style biscuit-block.

11.3 WIRING

- A. Shall be supported by D rings, Velcro, or J hooks.
- B. Pathways should not be shared with data cabling.
- C. When overriding existing voice or data cables in a box or conduit, Technology Services must be contacted and give approval to do so.

PART 12 – RACK LAYOUTS, LABELING, PARTS LIST, AND INSPECTION CHECK LIST

- A. Contractor shall be responsible to obtain, review and comply with all of the following diagrams, details and lists from the District. Refer to the District Telecommunications standards V4.
 - 1. LUSD MDF Layout
 - 2. LUSD IDF Layout
 - 3. LUSD Double 2-Post Rack Layout
 - 4. LUSD Previous IDF Layout
 - 5. LUSD Labeling Format
 - 6. JAESC Labeling Format
 - 7. Approved LUSD Parts List
 - 8. LUSD Basic Telecommunications Jack Legend
 - 9. Data/Camera System Install Inspection Check List
 - 10. Projector System Install Inspection Check List – Sample Continued
 - 11. Accessible Requirements for Cabinet Mounting

END OF SECTION

SECTION 31 11 00

CLEARING AND GRUBBING

PART 1 - GENERAL

1.01 SUMMARY

- A. Clearing vegetation, debris, trash and other materials within limits indicated.
- B. Grubbing of vegetation within limits indicated.

1.02 RELATED DOCUMENTS

- A. Caltrans Standard Specifications: Clearing and Grubbing.
- B. California Building Code: Site Work, Demolition and Construction.

PART 2 - PRODUCTS

2.01 NOT USED

PART 3 - EXECUTION

3.01 PREPARATION

- A. Locate and clearly flag vegetation to remain or to be relocated.

3.02 RESTORATION

- A. Repair or replace vegetation indicated to remain that is damaged by construction operations, as directed by the Owner.
- B. Employ a qualified arborist, licensed in jurisdiction where the Project is located, to submit details of proposed repairs and to repair damage to shrubs.

3.03 CLEARING AND GRUBBING

- A. Remove obstructions, trees, shrubs, grass, and other vegetation to permit installation of new construction. Removal includes digging out stumps and obstructions and grubbing roots.
- B. Remove trash, debris, logs, concrete, masonry and other waste materials.
- C. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
- D. Completely remove stumps, roots, obstructions, and debris extending to a depth of 18-inches below subgrade.
- E. Use only hand methods for grubbing within drip line of remaining trees.

END OF SECTION

SECTION 31 20 00
EARTHWORK

PART 1 – GENERAL

1.01 WORK SPECIFIED IN THIS SECTION

- A. Work of this section includes all required excavation, grading, preparation of subgrade for fills, proper placement of fills, including backfilling and compaction, the watering, rolling and compacting of fill material in place and the finish grading all as required by the drawings and as specified herein.
- B. All grading work shall be performed in accordance with:
 - 1. Title 24, Part 2, C.C.R., 2019 C.B.C., 2018 I.B.C. with California Amendments & Supplements
 - 2. The grading code of the County and any special requirements of the permit.
 - 3. Provide special inspection for engineered fill and compaction, Title 24, Part 2, C.C.R., 2019 C.B.C., 2018 I.B.C. with California Amendments & Supplements

1.02 PRINCIPAL ITEMS OR WORK INCLUDED HEREIN.

- A. Excavation
- B. Filling
- C. Backfilling
- D. Grading
- E. Miscellaneous related work necessary for a complete job.
- F. Special Requirements.

1.03 SCHEDULING

- A. PAD GRADING: It is imperative that Building construction commence as quickly as possible, therefore, contractor shall submit a schedule of grading that clearly establishes the construction of the Building Pad area as a priority of grading construction along with providing appropriate or required reports and certifications from the Civil Engineer, and governmental authority necessary to commence foundation excavation and building construction.

1.04 RELATED WORK SPECIFIED IN OTHER SECTIONS.

- A. Clearing and Grubbing: Section 31 11 00
- B. Final subgrade preparation for asphalt paving: Section 32 12 00. Flexible Paving.
- C. Aggregate base beneath asphalt paving is specified under Flexible Paving, Section 32 12 00.
- D. Excavation and backfill for utility lines specified under Mechanical and Electrical

Sections, shall be performed as specified in this Section.

PART 2 - PROTECTION

- 2.01 Contractor shall protect adjacent properties, roads, right-of-ways, easements and existing improvements from damage during the life of the grading operation and prevent caving, sloughing or the placing of materials or stock piles on adjacent properties.
- 2.02 Provide cribbing, sheathing, and shoring necessary to safely retain the earth banks and protect excavations and adjoining grades from caving and other damage resulting from excavating, together with suitable forms of protection against bodily injury to personnel employed on the work and the general public. The responsibility for the design, installation, and maintenance of required cribbing and shoring shall be entirely that of the Contractor and shall meet the approval of the State Division of Industrial Safety and local governing agencies' requirements.
- 2.03 Utility lines and structures shown shall be protected and treated as indicated. Where work not shown is encountered, report it to the Architect before proceeding with excavation. The Contractor shall bear the costs for all repairs to damaged or broken utilities and any damages related thereto.
- 2.04 It shall be the Contractor's full responsibility to take all measures necessary during grading to protect slope areas, both cut and fill, existing improvements and adjacent properties from storm damage and flood hazard originating on this project until final acceptance by the Owner. It shall be the Contractor's responsibility to maintain completed slopes until all slopes are in satisfactory compliance with the job specifications, all berms have been properly constructed, and all associated drainage devices have met the requirements of the Architect. It shall also be the Contractor's responsibility to prevent silt run-off from the limits of work.

PART 3 - TESTS AND REPORTS

- 3.01 A representative designated by the Owner will be engaged to perform continuous inspection of the placing and compacting of all fills and backfills within the limits of grading of this project. All work shall be done in accordance with these specifications and as recommended and approved by the Owners representative. Costs for all such inspections and tests shall be paid by the Owner. The Contractor shall be responsible for notifying the Owners representative in advance so that he may be present to perform his services as needed. The Owners representative shall approve all subgrades prior to placement of fill or placement of forms and reinforcing.
- 3.02 The Owners representative shall also make an investigation of the fill material to establish the ability of the soil to sustain the vertical loads to be imposed on the fill by the proposed structure.
- 3.03 The Owners representative shall submit compaction reports to the Architect and the Civil Engineer at the completion of the work, including test results and plot plans indicating the

locations from which the tested samples of fill were taken. The Owners representative shall keep the Architect informed on the progress of the grading work.

- 3.04 No clearing, demolitions, filling and backfilling, or grading operations shall be performed without the presence of a representative of the Owner. Operations undertaken at the site without the Owners representative present may result in exclusions of affected areas from the final compaction report for the project. The presence of the Owners representative will be for the purpose of providing observation and field testing, and will not include any supervising or directing of the actual work of the Contractor, directing his/her employees or agents. Neither the presence of the field representative nor the observations and testing by the Owners representative shall excuse the Contractor in any way for defects discovered in the Contractor's work. The Owners representative shall not be responsible for job or site safety on this project, which shall be the sole responsibility of the Contractor.
- 3.05 The existing soil conditions at this site have been investigated, and a report of findings is on file at the Owners office for review by the Contractors during the bidding period. This information is offered as supplemental information only, and no guarantee of existing soil or other conditions is intended.

PART 4 - MATERIALS

- 4.01 All imported material and sources for import material shall be approved by the Owners representative prior to hauling on site. Contractor shall be responsible for communicating the necessary information to the Owners representative in a timely manner so appropriate testing and reporting is performed.
- 4.02 The Contractor shall import any and all additional fill material required to complete the grading on this project. Imported fill soils shall be non-expansive, granular soils meeting the USCS classifications of SM, SP-SM or SW-SM with a maximum rock size of 3 inches and 5 to 35% passing the No. 200 sieve. The Owners representative shall evaluate the import fill soils before hauling to the site. The imported fill shall be placed in lifts no greater than 8 inches in loose thickness and compacted to at least 90% relative compaction (ASTM D1557) near optimum moisture content.
- 4.03 Fill material within new building and paved areas shall be clean, well-pulverized soil free of vegetation matter, rocks larger than 3 inches in any dimension, and other debris, and shall be subject to approval by the Owners representative.
- 4.04 Backfill material for storm drain and utility lines shall be non-expansive granular materials, such as clean sand, and shall be placed in a minimum thickness of 6 inches for bedding and backfilled to 12 inches above top of pipe. Bedding sand shall have a sand equivalent value of 30 or greater determined in accordance with Cal-Trans Test Method # 217.

PART 5 - SURPLUS EARTH MATERIAL

- 5.01 All surplus earth material not needed for the completion of the grading shall be removed from the site by the Contractor and disposed of in a legal manner.

PART 6 - INADEQUATE SOIL CONDITIONS

- 6.01 Should soil of inadequate density and bearing capability be encountered at the elevations indicated on the drawings, or where new fill is to be placed upon existing loose fill material exposed by excavation, the excavation shall be carried to the depth required to attain soil of bearing quality as determined by the Owners representative. The adequacy of all soil bearing value shall be determined by the Owners representative.

PART 7 - EXECUTION

7.01 PRE JOB CONFERENCE

An onsite pre job meeting with Architect, the Construction Manager, Civil Engineer, Inspector, and the Utility Line and Earthwork Subcontractor(s) is required prior to all grading related operations. ATTENDANCE IS MANDATORY.

7.02 PREPARATION

- A. Protect adjacent property and existing improvements and structures as necessary to prevent undermining, caving of cuts, and miscellaneous damage, or sloughing of material onto adjacent property.
- B. Provide cribbing, sheathing, and shoring necessary to safely retain the earth banks and protect excavations and adjoining grades from caving and other damage resulting from excavation together with suitable forms of protection against bodily injury to personnel employed on the work and the general public. Be responsible for the design, installation, and maintenance of required cribbing and shoring and same shall meet the approval of the State Division of Industrial Safety and local governing agencies' requirements.
- C. Protect existing improvements and adjacent properties from storm damage and flood hazard originating on this project until final acceptance by the Owner. Prevent silt runoff from the limits of work in accordance with governmental requirements, and the S.W.P.P.P.
- D. Borrow pits, if any, shall meet all requirements of these Specifications for over-excavation and backfill.

7.03 DUST CONTROL

During all grading operations, water shall be applied to the surfaces in the working area at frequent intervals and in sufficient quantities to allay the dust and for proper compaction. No other method will be permitted.

7.04 CLEAN-UP

Upon completion of work in this Section, remove rubbish, trash, and debris resulting from operations. Remove disused equipment and implements of service, and leave entire area involved in a neat, clean, and acceptable condition.

7.05 EXCAVATION

- A. Prior to any excavation or filling operation, the entire area within the limits of work containing vegetation shall be excavated to a minimum depth to ensure removal of all vegetation. This material shall be disposed of off the site in a legal manner.
- B. Excavate to the depths, lines, and grades indicated. Excavate sufficiently over-size to permit installation and removal of concrete forms and all other required work.
- C. Footing pads, if poured neatly, may be excavated to the net pad widths plus two inches if approved by the Architect. Approval will not be given until the completed excavation has been inspected.
- D. Should footing excavations exceed reburied dimensions or should sloughing occur, fill such extra space with concrete at no additional cost to the contract. If unsuitable material is found at the indicated depths, immediately notify the Architect.
- E. Sequencing of the work to ensure that one part of the excavating does not interfere with another part rests with the Contractor.
- F. Notify the Structural Engineer 48 hours before foundation excavations are ready for inspection.
- G. The bottoms of footings shall be free of loose material, debris, and water before concrete is placed.
- H. Cut banks shall be neatly trimmed to the required finish surface as the cut progresses, or the Contractor shall have the option of leaving the cuts full and finish grading by mechanical equipment which will produce the finish surfaces as shown on the drawings.
- I. All cut or "at grade" building, concrete and asphalt pavement areas shall be scarified to a minimum depth of 8 inches below subgrade brought to an optimum moisture content, and compacted to a density of not less than 90% of maximum dry density.

7.06 FILLING

- A. Prior to placing new fill in all other areas, the exposed cleared surface should be plowed, scarified, or otherwise processed to a depth of at least 24 inches, watered and/or aerated, as required, thoroughly mixed to a uniform, near optimum moisture condition, and recompacted to at least 90 percent of the ASTM D1557 test standard.
- B. All recompacted and new fill required to secure final subgrade elevations should be spread, water and/or aerated as required, thoroughly mixed to a uniform near optimum moisture condition, and compacted in approximated 8-inch thick lifts to at least 90 percent. Backfilling of excavations made for removal of any existing buried elements during site clearing should also be performed in this manner.

- C. Imported fill materials should consist of clean soils, free from vegetation, debris, or rocks larger than 3 inches. The Expansion Index value should not exceed a maximum of 50 ("Low" expansive per UBC Table 18-1-B.)
- D. Where fills are placed on existing slopes exceeding a slope of five horizontal to one vertical, the slopes shall be benched in accordance with the Owners representative's requirements and local governing public agencies' requirements, and compacted as herein specified before placing fill material on same, so that all fills shall be placed in horizontal layers as specified. Widths of benches shall be as directed by the Owners representative.
- E. Rock encountered in the excavation on this site may, at the option of the Contractor, be broken up into pieces not larger than three inches in maximum dimension, and be incorporated in the fill material if spread as directed by the Owners representative. Otherwise, all rocks larger than three inches in maximum dimensions shall be removed from the site. Rocks and stones larger than one inch in maximum dimension will not be permitted within the top 12 inches of finished grade in non-paved areas.
- F. Fill banks shall be graded full and compacted beyond the grade of the finish bank. After the banks have been filled, they shall be trimmed to the finish grades and limits shown on the drawings.

7.07 BACKFILLING

- A. Place no backfill until work in excavations has been approved. Remove cave-ins and loose soil to permit inspection.
- B. Place backfill in layers which will compact to six inches maximum, concurrently on both sides of footings and walls. Thoroughly compact each layer with mechanical tampers, adding water as required to obtain optimum moisture content, and compact as set forth in paragraph 7.9 herein.
- C. Backfill placed in narrow, restricted areas, such as along utility trenches, may possibly be placed in up to 12-inch thick lifts, depending on the materials, procedures and equipment being employed. Backfill consolidation by flooding or jetting is prohibited unless approved by the Owners representative. In any case, all backfill should be mechanically compacted to at least 90 percent of the aforementioned test standard.

7.08 FINISH GRADING

- A. The entire area within the limits of grading as indicated on the Drawings shall be constructed to the lines, grades, elevations, slopes, and cross sections indicated on the Drawings. When the grading has been completed, the areas shall be rolled smooth with a steel tandem roller or equal.
- B. Fine grade to bring areas to required lines and grades. The subgrade elevation within the building area for slabs on grade (without a base course) shall be within 0.50 inch along a 10-foot straight edge.

- C. Slope finish grades to drain surface water away from buildings, walks, paving, and other structures. Generally, grade with uniform slope between points where elevations are given, or between such points and existing grades. Excavate and grade swales to provide drainage away from and around buildings.
- D. Areas to Receive Paving or Surfacing: Review plans and details for each area. See plans for paving and base course thickness. Review Drawings for site work details.
- E. Areas to Receive Interior Building Slab-on-Grade: Review plans and details for thickness of slabs and granular fill under slabs.
- F. Areas to receive Topsoil and/or Planting: Where not otherwise indicated, areas outside of buildings shall be given uniform slopes between points for which finish grades are shown, or between such points and existing established grade, except that vertical curves or roundings shall be provided at abrupt changes in slope.
- G. Rocks or cobbles larger than 1-inch in diameter shall not be placed in the upper 12-inches of planting area fill, rocks, or cobbles larger than 3/4 inch shall not appear on the finish graded surface.
- H. It shall be the Contractor's full responsibility to take all measures necessary during grading to protect slope areas, both cut and fill, and adjacent properties from storm damage and flood hazard originating on this project until final acceptance by the Owner. It shall be the Contractor's responsibility to maintain completed slopes until all slopes are in satisfactory compliance with the job specifications.

7.09 COMPACTION

- A. All fills shall be compacted to at least 90 percent of maximum density obtainable using the ASTM test procedure D1557. All areas, which are scarified, shall be recompacted to these same requirements.
- B. All earthwork operations should be subject to compaction monitoring field observation and testing by the Owners representative. The Owners representative should be notified at least two days in advance of the start of grading. A joint meeting between a representative of the Client, and the Contractor is recommended prior to grading to discuss specific procedures and scheduling.
- C. Compaction by flooding or jetting is prohibited unless approved by the Owners representative.

7.10 SPECIAL REQUIREMENTS

- A. REMEDIAL GRADING
 - 1. Building slabs and Footings
Overexcavate to a depth of 2 feet below existing grade or the bottom of building footings, whichever is greater, to extend a minimum of 5 feet

beyond the outer edge of the building slabs or footings (including column supports).

2. Garden and Retaining walls
Overexcavate to a depth of 2 feet below existing grade or the bottom of footings, whichever is greater, to extend a minimum of 2 feet beyond the face of the footing.
 3. Areas to receive fill, pavements or hardscape
The top 18 inches of the native subgrade shall be overexcavated. The bottom of overexcavation shall be scarified an additional 6 inches, moisture conditioned and compacted to 90% relative compaction per ASTM D1557.
-
- B. A representative of the Owner shall observe the bottom of all excavations. Artificial fill, soft soils, organic soils, or other unsuitable material remaining in the bottom of the excavations shall be overexcavated until competent natural material is encountered. Competent natural soil is defined as undisturbed material exhibiting a relative compaction of at least 85 percent.
 - C. Prior to replacing compacted fill in over-cut building, concrete flatwork and A.C. paved areas, the exposed over-cut surface should be plowed, scarified, or otherwise processed to an additional depth of at least 12 inches, water and/or aerated as required, thoroughly mixed to a uniform, near optimum moisture condition, and recompact to at least 90 percent of maximum dry density obtainable using the ASTM D1557 test standard.
 - D. All recompact and new fill should be spread, watered, mixed and compacted by mechanical means in approximate 8 inch thick lifts to at least 90 percent of the aforementioned standard.
 - E. Completed building, exterior concrete pavement, and A.C. pavement subgrades should be trimmed and rolled to a firm smooth surface. Final watering and rolling should be performed immediately prior to placing concrete or paving.
 - F. Prior to placing backfill within the remaining excavation behind new retaining walls, these areas should first be cleared of all significant vegetation, construction debris, loose and/or disturbed soils, etc. All new backfill should be spread, watered or aerated as required, thoroughly mixed to a uniform near optimum moisture condition and compacted by mechanical means in approximate 6 to 8 inch thick lifts. The degree of compaction obtained should be at least 90 percent of maximum dry density per the ASTM D1557 laboratory test standard.
 - G. The top 12 inches of soil within all designated planted areas shall be imported topsoil or stockpiled existing site soil capable of supporting plant growth. The 12-inch layer shall be measured down from the finish grade shown on the project drawings.
 - H. At the completion of grading operations and prior to building, A.C. pavement and concrete paving construction, Contractor shall provide an as-built grading plan at his own expense. As-built grading plan shall be prepared, signed and dated by a

licensed land surveyor or Registered Civil Engineer licensed to practice land surveying.

- I. The upper 6 inches of subgrade soils shall be compacted to 95% of maximum dry density when no aggregate base material is specified for asphalt paving.

END OF SECTION

SECTION 31 23 00

EXCAVATION AND FILL

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Excavation and/or embankment from existing ground to subgrade, including soil sterilant, for roadways, driveways, parking areas, walks, paths, or trails and any other site improvements called for on the Plans.

1.02 SECTION EXCLUDES

- A. Earthwork related to underground utility installation, see Section 31 23 33 – Trenching and Backfilling.

1.03 RELATED DOCUMENTS

A. ASTM:

- 1. D 1557, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)).
- 2. D 1586, Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils.
- 3. D 2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).
- 4. D 3740, Standard Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
- 5. D 4318. Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
- 6. E 329, Standard Specification for Agencies Engaged in Construction Inspection, Testing or special Inspection.

B. California Code of Regulation Title 24, Part 2, California Building Code:

- 1. Accessibility to Public Buildings.
- 2. Safeguards During Construction.

C. Caltrans Standard Specifications:

- 1. Watering.
- 2. Earthwork.

- D. CAL/OSHA, Title 8.

1.04 DEFINITIONS

- A. Borrow: Approved soil material imported from off-site for use as Structural Fill or Backfill.
- B. Excavation: Removal of material encountered above subgrade elevations.
 - 1. Authorized Over-Excavation: Excavation below subgrade elevations or beyond indicated horizontal dimensions as shown on plans.
 - 2. Unauthorized Over-Excavation: Excavation below subgrade elevations or beyond indicated horizontal dimensions. Unauthorized excavation shall be without additional compensation.
- C. Structural Backfill: Soil materials used to fill excavations resulting from removal of existing below grade facilities, including trees. Any fill soil or aggregate base or crush rock under the building shall not contain recycled asphalt, asphalt grindings, or soil with petroleum products. See Section 31 23 33 – Trenching and Backfilling.
- D. Structural Fill: Soil materials used to raise existing grades.
- E. Rock: Rock material in beds, ledges, unstratified masses, and conglomerate deposits and boulders of rock material $\frac{3}{4}$ -cubic yards or more in volume that, according to ASTM D 1586, exceeds a standard penetration resistance of 100 blows/2-inches.
- F. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man made stationary features constructed above or below grade.
- G. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below subbase, base or topsoil materials.
- H. Unsuitable Material: Any soil material that is not suitable for a specific use on the Project.
- I. Utilities: onsite underground pipes, conduits, ducts and cables.

1.05 SUBMITTALS

- A. Follow submittal procedures outlined in Section 01 33 00 – Submittal Procedures.
- B. Submit material certificates signed by the material producer and the Contractor, certifying that that each material item complies with, or exceeds the specified requirements.

1.06 QUALITY ASSURANCE

- A. Conform all work to the appropriate portion(s) of the California Code of Regulations, Title 24 and Caltrans Standard Specifications.
- B. Percentage of compaction specified shall be the minimum acceptable. The percentage represents the ratio of the dry density of the compacted material to the maximum dry density of the material as determined by the procedure set forth in ASTM D 1557.

- C. Upon completion of the construction work, certify that all compacted fills and foundations are in place at the correct locations, and have been constructed in accordance with sound construction practice. In addition, certify that the materials used are of the types, quality and quantity required by these Technical Specifications. The Contractor shall be responsible for the stability of all fills and backfills constructed by his forces.
- D. Finish soil grade tolerance at completion of grading:
 - 1. Building and paved areas: +0.05
 - 2. Other areas: ± 0.10 feet.
- E. The project geotechnical engineer shall be notified of the construction schedule at least one week prior to the beginning of major site construction, and notified at least 48 hours (working days) before being required to perform field observation and testing.

1.07 PROJECT CONDITIONS

- A. Promptly notify the Owner of surface or subsurface conditions differing from those disclosed in the construction documents. First notify the Owner verbally to permit verification and extent of condition and then in writing. No claim for conditions differing from those anticipated in the Contract Documents will be allowed unless the Contractor has notified the Owner in writing of differing conditions prior to the Contractor starting work on affected items.
- B. Protect open excavations, trenches, and the like with fences, covers and railings to maintain safe pedestrian and vehicular traffic passage.
- C. Prevent erosion of freshly graded areas during construction and until such time as permanent drainage and erosion control measures have been installed.
- D. Temporarily stockpile fill material in an orderly and safe manner and in a location approved by the Owner.
- E. Provide dust and noise control in conformance with Division 1 General Requirements for Cleaning and Waste Management.
- F. Environmental Requirements: When unfavorable weather conditions necessitate interrupting earthwork operation, areas shall be prepared by compaction of surface and grading to avoid collection of water. Provide adequate temporary drainage to prevent erosion. After interruption, compaction specified in last layer shall be re-established before resuming work.

PART 2 - PRODUCTS

2.01 SOIL MATERIALS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from on-site excavations.
- B. On-Site Structural Fill and Structural Backfill: Soil or soil-rock mixture from on site excavations, free from organic matter or other deleterious substances. On-site structural fill and backfill shall not contain rocks or rock fragments over 4 inches in greatest dimension and not more than 15 percent shall be over 2-1/2 inches in greatest dimension and with an organic content less than 3.0 percent by weight.
- C. Imported Structural Fill and Structural Backfill: Conform to the requirements of on-site structural fill. Material shall also be a non-expansive and predominantly granular soil or soil-rock mixture with plasticity index of 15 or less in accordance with ASTM D 4318 and an R-Value of 25 or greater.

PART 3 - EXECUTION

3.01 GENERAL

- A. Earthwork: conform to Caltrans Standard Specifications as modified by the Contract Documents.
- B. Placement and compaction of material by flooding, ponding, or jetting will not be permitted.
- C. The use of explosives will not be permitted.

3.02 CONTROL OF WATER AND DEWATERING

- A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding the site and surrounding area. Provide dewatering equipment necessary to drain and keep excavations and site free from water.
- B. Dewater during backfilling operation so that groundwater is maintained a least one foot below level of compaction effort.
- C. Obtain the Owner's approval for proposed control of water and dewatering methods.
- D. Protect subgrades from softening, undermining, washout and damage by rain or water accumulation.
- E. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations.
- F. Maintain dewatering system in place until dewatering is no longer required.

3.03 WET WEATHER CONDITIONS

- A. Do not prepare subgrade, place or compact soil materials if above optimum moisture content.

3.04 BRACING AND SHORING

- A. Conform to California and Federal OSHA requirements.
- B. Place and maintain such bracing and shoring as may be required to support the sides of the excavations for the proper protection of workmen; to facilitate the work; to prevent damage to the facility being constructed; and to prevent damage to adjacent structures or facilities. Remove all bracing and shoring upon completion of the work.
- C. Be solely responsible for all bracing and shoring and, if requested by the Owner, submit details and calculations to the Owner. The Owner may forward the submittal to the Consulting Engineer and/or the California Division of Industrial Safety for their review. The Contractor's submittal shall include the basic design, assumed soils conditions and estimation of forces to be resisted, together with plans and specifications of the materials and methods to be used, and shall be prepared by a civil engineer or structural engineer registered in California. No excavations related to the proposed facility shall precede a response to the submittal by the Owner.
- D. Be solely responsible for installing and extracting the sheathing in a manner which will not disturb the position or operation of the facility being constructed or adjacent utilities and facilities.

3.05 EXCAVATION

- A. Excavate earth and rock to lines and grades shown on drawings and to the neat dimensions indicated on the Plans, required herein or as required to satisfactorily compact backfill.
- B. Remove and dispose of large rocks, pieces of concrete and other obstructions encountered during excavation.
- C. Where forming is required, excavate only as much material as necessary to permit placing and removing forms.
- D. Provide supports, shoring and sheet piles required to support the sides of excavations or for protection of adjacent existing improvements.

3.06 REMOVAL OF EXISTING FILLS AND UNSUITABLE MATERIAL

- A. Over-excavate areas of existing fills and other unsuitable material encountered during mass grading.
- B. Compensation for increased removal widths and depths that are not required will not be considered, except when such increase is necessary for protection of life and property as determined by and approved by the Owner.

3.07 GRADING

- A. Uniformly grade the Project to the elevations shown on plans.
- B. Finish ditches, gutters and swales to the sections, lines and grades indicated and to permit proper surface drainage.
- C. Round tops and bottoms of slopes as indicated or to blend with existing contours.

3.08 SUBGRADE PREPARATION

- A. Install underground utilities and service connections prior to final preparation of subgrade and placement of base materials for final surface facilities. Extend services so that final surface facilities are not disturbed when service connections are made.
- B. Prepare subgrades under paved areas, curbs, gutters, walks, structures, other surface facilities and areas to receive structural fill.
- C. Prepare subgrades for paved areas, curbs and gutters by plowing or scarifying surface at least 6 inches below final subgrade elevations and 5-feet beyond edge of pavement. Uniformly moisture condition to obtain optimum moisture contents. Break clods and condition surface by harrowing or dry rolling. Remove boulders, hard ribs and solid rock. Prepare earth uniform for full depth and width of subgrade.
- D. Protect utilities from damage during compaction of subgrades and until placement of final pavements or other surface facilities.

3.09 PLACEMENT OF STRUCTURAL FILL

- A. Place structural fill on prepared subgrade.
- B. Spread structural fill material in uniform lifts not more than 8-inches in un-compacted thickness and compact.
- C. Place structural fill material to suitable elevations above grade to provide for anticipated settlement and shrinkage.
- D. Overbuild fill slopes to obtain required compaction. Remove excess material to lines and grades indicated.
- E. Do not drop fill on structures. Do not backfill around, against, upon concrete, or masonry structures until structure has attained sufficient strength to withstand loads imposed and the horizontal structural system had been installed.
- F. Backfill in uniform lifts not exceeding 8 inches in uncompacted thickness. Each lift should be brought to a uniform moisture content of at least 1 percent above optimum prior to compacting by either spraying the soil with water if it is too dry or aerating the material if it is too wet.

3.10 KEYWAYS AND BENCHES

- A. Provide keyways as indicated for fill slopes steeper than 6 horizontal to 1 vertical. Extend keyway -feet minimum into competent, undisturbed soil or 3-feet minimum into competent, undisturbed rock.
- B. Place subsurface drains in bottom of keyway in conformance with Section 33 46 00 – Subdrainage.
- C. Bench subgrade as indicated above toe of fill.
- D. Place subsurface drains at benches every 20 vertical feet.

3.11 LOT FINISH GRADING

- A. Blade finish lots to lines and grades indicated.

3.12 COMPACTION AND TESTING

- A. Do not compact by ponding, flooding or jetting.
- B. Compact soils at optimum water content. Aerate material if it is too wet. Add water to material if it is too dry. Thoroughly mix lifts before compaction to ensure uniform moisture distribution.
- C. Perform compaction using rollers, pneumatic or vibratory compactors.
- D. Compaction requirements:
 - 1. Compact structural fills less than 5-feet thick to 90 percent compaction.
 - 2. Compact structural fill 5-feet thick or greater to 95 percent compaction.
 - 3. Compact the upper 6 inches of subgrade soils beneath pavements, curbs and gutters to 95 percent compaction. Extend compaction 5-feet beyond pavement.
 - 4. Compact the upper 6-inches of subgrade soils to the following percentage of compaction: 95 percent under walks and pavements; 93 percent for foundations; and 90 percent for areas to receive structural fill.”

3.13 DISPOSAL

- A. Lawfully dispose of all unsuitable and excess or surplus material off-site at no cost to the Owner.

END OF SECTION

SECTION 31 23 33

TRENCHING AND BACKFILLING

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Excavation, bedding, and backfill for underground storm drain, sanitary sewer, and water piping and associated structures.

1.02 SECTION EXCLUDES

- A. Drainage fill material and placement around subdrains.
- B. Trenching and backfill for other utilities such as underground HVAC piping, electrical conduit, telephone conduit, gas piping, cable TV conduit, etc.

1.03 RELATED DOCUMENTS

A. ASTM:

- 1. C 33, Standard Specification for Concrete Aggregates.
- 2. C 150, Standard Specification for Portland Cement.
- 3. C 260, Standard Specification for Air-Entraining Admixtures for Concrete.
- 4. C 618, Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.
- 5. D 1557, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)).
- 6. D 2321, Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.
- 7. D 2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).
- 8. D 3740, Standard Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
- 9. E 329, Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection.

B. California Code of Regulation Title 24, Part 2, California Building Code:

- 1. Accessibility to Public Buildings.
- 2. Safeguards During Construction.

C. Caltrans Standard Specifications:

1. Earthwork.
2. Aggregate Bases.
3. Subsurface Drains.
4. Geosynthetics.

D. CAL/OSHA, Title 8.

1.04 DEFINITIONS

A. AC: Asphalt Concrete.

B. ASTM: American Society for Testing and Materials.

C. Bedding: Material from bottom of trench to bottom of pipe.

D. CDF: Controlled Density Fill.

E. DIP: Ductile Iron Pipe.

F. Initial Backfill: Material from bottom of pipe to 12-inches above top of pipe.

G. PCC: Portland Cement Concrete.

H. RCP: Reinforced Concrete Pipe.

I. Springline of Pipe: Imaginary line on surface of pipe at a vertical distance of $\frac{1}{2}$ the outside diameter measured from the top or bottom of the pipe.

J. Subsequent Backfill: Material from 12-inches above top of pipe to subgrade of surface material or subgrade of surface facility or to finish grade.

K. Trench Excavation: Removal of material encountered above subgrade elevations and within horizontal trench dimensions.

1. Authorized Trench Over-Excavation: Excavation below trench subgrade elevations or beyond indicated horizontal trench dimensions as shown on plans.
2. Unauthorized Trench Over-Excavation: Excavation below trench subgrade elevations or beyond indicated horizontal trench dimensions. Unauthorized excavation shall be without additional compensation.

L. Utility Structures:

1. Storm drainage manholes, catch basins, drop inlets, curb inlets, vaults, etc.
2. Sanitary sewer manholes, vaults, etc.
3. Water vaults, etc.

1.05 SUBMITTALS

- A. Follow submittal procedures outlined in Section 01 33 00 – Submittal Procedures.
- B. Product Data:
 - 1. Grading and quality characteristics showing compliance with requirements for the Work.
 - 2. Certify that material meets requirements of the Project.
- C. Samples:
 - 1. If required, provide 40-pound samples of all imported trench bedding and backfill material sealed in airtight containers, tagged with source locations and suppliers of each proposed material.
 - 2. Provide materials from same source throughout work. Change of source requires approval of the Owner.

1.06 QUALITY ASSURANCE

- A. Conform all work to the appropriate portion(s) of the Caltrans Standard Specifications, Section 19.
- B. Percentage of compaction specified shall be the minimum acceptable. The percentage represents the ratio of the dry density of the compacted material to the maximum dry density of the material as determined by the procedure set forth in ASTM D 1557.
- C. Conform work to the requirements of the California Building Code: Pipe and Trenches.

1.07 PROJECT CONDITIONS

- A. Promptly notify the Owner of surface or subsurface conditions differing from those disclosed in the construction documents. First notify the Owner verbally to permit verification and extent of condition and then in writing. No claim for conditions differing from those anticipated in the Contract Documents will be allowed unless Contractor has notified the Owner in writing of differing conditions prior to contractor starting work on affected items.
- B. Protect open, trenches, and utility structure excavations with fences, covers and railings to maintain safe pedestrian and vehicular traffic passage.
- C. Stockpile on-site and imported backfill material temporarily in an orderly and safe manner.
- D. Provide dust and noise control in conformance with Division 1 General Requirements for Cleaning and Waste Management.

PART 2 - PRODUCTS

2.01 PIPE BEDDING AND INITIAL BACKFILL

- A. ASTM D 2321, Class IA, IB or II.
 - 1. Clean and free of clay, silt or organic matter.
- B. Permeable Material: Conform to Caltrans Standard Specifications, Class 2 permeable.
- C. Class 2 Aggregate Base: Conform to Caltrans Standard Specifications, ¾-inch maximum. Material shall also be non-expansive and predominantly granular soil or soil-rock mixture "(percent of passing #200: 50 maximum, 5 minimum)" with plasticity index of 15 or less.
- D. Sand: Conform to Caltrans Standard Specifications.

2.02 WARNING TAPE

- A. See Section 33 10 00 – Water Utilities.

2.03 SUBSEQUENT BACKFILL

- A. Conform to on-site or imported structural backfill in Section 31 23 00 – Excavation and Fill.

2.04 CONTROLLED DENSITY FILL (CDF) (IN TRENCHES)

- A. Provide non-structural CDF, from bottom of trench to finish subgrade of subbase or base material, that can be excavated by hand and produce unconfined compressive 28-day strengths from 50-psi to a maximum of 150-psi. Provide aggregate no larger than 3/8-inch top size. The 3/8-inch aggregate shall not comprise more than 30% of the total aggregate content.
- B. Cement: Conform to the standards as set forth in ASTM C-150, Type II Cement.
- C. Fly Ash: Conform to the standards as set forth in ASTM C-618, for Class F pozzolan. Do not inhibit the entrainment of air with the fly ash.
- D. Air Entraining Agent: Conform to the standards as set forth in ASTM C-260.
- E. Aggregates need not meet the standards as set forth in ASTM C-33. Any aggregate, producing performances characteristics described herein will be accepted for consideration. The amount of material passing a #200 sieve shall not exceed 12% and no plastic fines shall be present.
- F. Provide CDF that is a mixture of cement, Class F pozzolan, aggregate, air entraining agent and water. CDF shall be batched by a ready mixed concrete plant and delivered to the job site by means of transit mixing trucks.
- G. The Contractor shall determine the actual mix proportions of the controlled density fill to meet job site conditions, minimum and maximum strengths, and unit weight. Entrained air content shall be a minimum of 4.0%. The actual entrained air content shall be

established for each job with the materials and aggregates to be used to meet the placing and unit weight requirements. Entrained air content may be as high as 20% for fluidity requirements.

2.05 CONCRETE STRUCTURE BEDDING AND BACKFILL

- A. Precast Structures: Same materials to the same heights as specified for pipe bedding and backfill.
- B. Poured-in-Place Structures:
 - 1. Bedding: In general, bedding is not required, pour bases against undisturbed native earth in cut areas and against engineered fill compacted to 90% relative compaction in embankment areas.
 - 2. Side Backfill: On-site or imported structural fill meeting the requirements given in Section 31 23 00 – Excavation and Fill.

2.06 FILTER FABRIC

- A. Filter Fabric:
 - 1. Filter Fabric: per Caltrans Standard Specifications.

PART 3 - EXECUTION

3.01 TRENCHING AND EXCAVATION

- A. Existing PCC or AC Areas: Cut PCC or AC to full depth at a minimum distance of 12-inches beyond the edge of the trench.
- B. Excavate by hand or machine. For gravity systems begin excavation at the outlet end and proceed upstream. Excavate sides of the trench parallel and equal distant from the centerline of the pipe. Hand trim excavation. Remove loose matter.
- C. Excavation Depth for Bedding: Minimum of 4-inches below bottom, except that bedding is not required for nominal pipe diameters of 2-inches or less.
- D. Excavation Width at Springline of Pipe:
 - 1. Up to a nominal pipe diameter of 24-inches: Minimum of twice the outside pipe diameter.
 - 2. Nominal pipe diameter of 30-inches through 36-inches: Minimum of the outside pipe diameter plus 2-feet.
 - 3. Nominal pipe diameter of 42-inches through 60-inches: Minimum of the outside pipe diameter plus 3-feet.
- E. Over-Excavations: Backfill trenches that have been excavated below bedding design subgrade, with approved bedding material.

- F. Comply with the Owner's limitations on the amount of trench that is opened or partially opened at any one time. Do not leave trenches open overnight without the approval of the Owner.
- G. Where forming is required, excavate only as much material as necessary to permit placing and removal of forms.
- H. Grade bottom of trench to provide uniform thickness of bedding material and to provide uniform bearing and support for pipe along entire length. Remove stones to avoid point bearing.

3.02 CONTROL OF WATER AND DEWATERING

- A. Be solely responsible for dewatering trenches and excavations and subsequent control of ground and surface water. Provide and maintain such pumps or other equipment as may be necessary to control ground water.
- B. Dewater during backfilling operation so that groundwater is maintained a least one foot below level of compaction effort.
- C. Reroute surface water runoff away from open trenches and excavations. Do not allow water to accumulate in trenches and excavations.
- D. Maintain dewatering system in place until dewatering is no longer required.

3.03 BRACING AND SHORING

- A. Conform to California and Federal OSHA requirements.
- B. Place and maintain such bracing and shoring as may be required to support the sides of the excavations for the proper protection of workmen; to facilitate the work; to prevent damage to the pipes and appurtenances being constructed; and to prevent damage to adjacent structures or facilities. Remove all bracing and shoring upon completion of the work.
- C. Be solely responsible for all bracing and shoring and, if requested by the Owner, submit details and calculations to the Owner. The Owner may forward the submittal to the Consulting Engineer and/or the California Division of Industrial Safety for their review. The Contractor's submittal shall include the basic design, assumed soils conditions and estimation of forces to be resisted, together with plans and specifications of the materials and methods to be used, and shall be prepared by a civil engineer or structural engineer registered in California. No excavations in trench section or around structures shall precede a response to the submittal by the Owner.
- D. Be solely responsible for installing and extracting the sheathing in a manner which will not disturb the line, grade, or backfill compaction or operation of the utility being installed or adjacent utilities and facilities.

3.04 PIPE BEDDING

- A. Accurately shape bedding material to the line and grade called for on the Plans. Carefully place and compact bedding material to the elevation of the bottom of the pipe in layers

not exceeding 8-inches in loose thickness. Compact bedding material at optimum water content to 95% relative compaction unless specified otherwise on the. Compact by pneumatic tampers or other mechanical means. Jetting or ponding of bedding material will not be permitted.

3.05 WARNING TAPE

- A. Install in accordance with Section 33 10 00 – Water Utilities.

3.06 BACKFILLING

- A. Bring initial backfill up simultaneously on both sides of the pipe, so as to prevent any displacement of the pipe from its true alignment. Carefully place and compact initial backfill material to an elevation of 12-inches above the top of the pipe in layers not exceeding 8-inches in loose thickness. Compact bedding material at optimum water content to 90% relative compaction unless specified otherwise on the. Compact by pneumatic tampers or other mechanical means. Jetting or ponding of initial backfill material will not be permitted.
- B. Bring subsequent backfill to subgrade or finish grade as indicated. Carefully place and compact subsequent backfill material to the proper elevation in layers not exceeding 8-inches in loose thickness. Compact bedding material at optimum water content to 90% relative compaction, unless specified otherwise on the Plans. Compact by pneumatic tampers or other mechanical means. Jetting or ponding of subsequent backfill material will not be permitted.
- C. Do not use compaction equipment or methods that produce horizontal or vertical earth pressures that may cause excessive pipe displacement or damage the pipe.

3.07 CLEANUP

- A. Upon completion of utility earthwork all lines, manholes catch basins, inlets, water meter boxes and other structures shall be thoroughly cleaned of dirt, rubbish, debris and obstructions of any kind to the satisfaction of the Owner.
- B. See Section 01 74 00 – Refer to Division 1 General Requirements for Cleaning and Waste Management for further cleanup requirements.

END OF SECTION

SECTION 31 31 19

VEGETATION CONTROL

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Application of soil sterilant on subgrades for roadways, driveways, parking areas, walks, paths, trails and any other site improvements called for on the plans.

1.02 RELATED SECTIONS

- A. Section 31 23 00 – Excavation and Fill.

1.03 RELATED DOCUMENTS

- A. CAL/OSHA, Title 8.

1.04 SUBMITTALS

- A. Follow submittal procedures outlined in Section 01 33 00 – Submittal Procedures.

PART 2 - PRODUCTS

2.01 SOIL STERILANT

- A. Commercial chemical for weed control, registered by EPA. Provide granular, liquid or wet-able powder form.

PART 3 - EXECUTION

3.01 SOIL STERILIZATION

- A. Apply soil sterilant to areas indicated, such as beneath asphalt concrete pavement, brick pavement, concrete pavement and at grade concrete slabs, including sidewalks, curbs and gutters. Also where indicated apply soil sterilant below expansion and control joints and at areas where pipes, ducts or other features penetrate slabs.
- B. Apply soil sterilant uniformly and at the rates recommended by the manufacturer.
- C. Apply soil sterilant to prepared subgrade, or after installation of aggregate base as recommended by the manufacturer.

3.02 DISPOSAL

- A. Lawfully dispose of all unsuitable and excess or surplus material off-site at no cost to the Owner.

END OF SECTION

SECTION 32 05 23

CONCRETE FOR EXTERIOR IMPROVEMENTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Materials for portland cement concrete.
- B. Aggregate and aggregate grading for portland cement concrete.
- C. Water for portland cement concrete.
- D. Admixtures for portland cement concrete.
- E. Proportioning for portland cement concrete.
- F. Mixing and transporting portland cement concrete.
- G. Formwork for cast in place portland cement concrete.
- H. Embedded materials for portland cement concrete.
- I. Steel reinforcement for portland cement concrete.
- J. Placing and finishing portland cement concrete.
- K. Curing portland cement concrete.
- L. Protecting portland cement concrete.

1.02 RELATED DOCUMENTS

- A. ASTM Standards
 - 1. A 1064, Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete.
 - 2. A 615, Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
 - 3. C 94, Standard Specification for Ready-Mixed Concrete.
 - 4. C 114, Standard Test Methods for Chemical Analysis of Hydraulic Cement.
 - 5. C 150, Standard Specification for Portland Cement.
 - 6. C 618, Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.
 - 7. D 1751, Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Non-extruded and Resilient Bituminous Types).
- B. Caltrans Standard Specifications:
 - 1. Concrete Structures.
 - 2. Concrete Curbs and Sidewalks.
 - 3. General section of Concrete section.
- C. California Building Code:
 - 1. Accessibility To Public Buildings, Public Accommodations, Commercial Buildings and Public Housing (Chapter 11B).
 - 2. Concrete.
 - 3. Safeguards During Construction.

1.03 DEFINITIONS

- A. ASTM: American Society for Testing and Materials.

1.04 SUBMITTALS

- A. Follow submittal procedures outlined in Section 01 33 00 – Submittal Procedures.

- B. Design Mixes: Have all concrete mixes designed by a testing laboratory and approved by the Consulting Engineer. Conform all mixes to the applicable building code requirement, regardless of other minimum requirements listed herein or on the drawings. Submit mix designs for review before use. Show proportions and specific gravities of cement, fine and coarse aggregate, and water and gradation of combined aggregates.
- C. Reinforcing Steel Shop-Drawings

1.05 QUALITY ASSURANCE

- A. Concrete shall be subject to quality assurance in accordance with Section 90 of the Standard Specifications.
 - 1. Slump tests: Have available, at job site, equipment required to perform slump tests. Make one slump test for each cylinder sample, from same concrete batch. Allowable maximum slump shall be 4 inches for walls and 3 inches for slabs on grade and other work.
- B. Certifications:
 - 1. Provide Owner's Representative at the time of delivery with certificates of compliance signed by both Contractor and Supplier containing the following statements:
 - 2. Materials contained comply with the requirements of the Contract Documents in all respects.
 - 3. Proportions and mixing comply with the design mix approved by the Consulting Engineer. Design mix shall have been field tested in accordance with the herein requirements of the Caltrans Standard Specifications and produces the required compressive strength under like conditions.
 - 4. Statement of type and amount of any admixtures.
 - 5. Provide Owner's Representative, at time of delivery, with certified delivery ticket stating volume of concrete delivered and time of mixing, or time of load-out in case of transit mixers.
- C. Conform to the applicable provisions of the Caltrans Standard Specification and these Technical Specifications.
 - 1. Conform construction of portland cement concrete surface improvements (including curbs, gutters, medians, valley gutters, walks) to the requirements of the Caltrans Standard Specifications unless otherwise required in these Technical Specifications or shown on the Plans.
 - 2. Construct "V" ditches in accordance with Section 72-5.03 of the Standard Specifications; except that finishing shall be in accordance with Standard Specification Section 73 instead of 53, or as otherwise required in these Technical Specifications or shown on the Plans.
 - 3. Conform other construction of portland cement concrete items to the requirements of the Caltrans Standard Specifications unless otherwise required in these Technical Specifications or shown on the Plans.
- D. Conform to the requirements of the California Building Code for testing of reinforcing bars.

1.06 DESIGNATION

- A. General: Whenever the 28-day compressive strength is designated herein or on the plans is greater than 3,600 psi, the concrete shall be considered to be designated by compressive strength. The 28-day compressive strength shown herein or on the

plans which are 3,600 psi or less are shown for design information only and are not considered a requirement for acceptance of the concrete. Whenever the concrete is designated by class or as minor concrete herein or on the plans, the concrete shall contain the cement per cubic meter shown in section 90-1.01 of the Caltrans Standard Specifications.

- B. Unless specified otherwise herein or on the Plans, Portland Cement Concrete for this Project shall be Class "2" as specified in the Caltrans Standard Specifications.

PART 2 - PRODUCTS

2.01 PORTLAND CEMENT

- A. General: Type V or type II (modified) cement conforming to the requirements of ASTM C 150, with the following modifications:
 - 1. Cement shall not contain more than 0.60% by weight of alkalis, calculated as the percentage of Na_2O plus 0.658 times the percentage of K_2O when determined by either 4 intensity flame photometry or by the atomic absorption method. The instrument and procedure used shall be qualified as to precision and accuracy in accordance with the requirements of ASTM C 114.
 - 2. The autoclave expansion shall not exceed 0.50%.
 - 3. Mortar containing the Portland Cement to be used and the sand, when tested in accordance with Test Method No. Calif. 527, shall not expand in water more than 0.010% and shall have an air content less than .048%.
 - 4. Allowable tri-calcium Aluminate (C_3A) by weight shall not exceed 5%. Allowable tetracalcium aluminoferrite plus twice the tricalcium aluminate ($\text{C}_4\text{AF}+2\text{C}_3\text{A}$) by weight shall not exceed 25%. The sulfate expansion test (ASTM C 452) may be used in lieu of the above chemical requirements, provided the sulfate expansion does not exceed 0.040% at 14 days (max.).
 - 5. Contractor may substitute pozzolan for Portland Cement in amounts up to 15% of the required mix unless high early strength concrete is specified. Pozzolan shall consist of Class F Fly Ash meeting the requirements of ASTM C 618.
- B. Cement for Surface Improvements: Provide a coloring equivalent to ¼ pound of lampblack per cubic yard. Add to the concrete at the central mixing plant.
- C. Liquiblack, as supplied by Concrete Corporation of Redwood City, California, may be used in lieu of lampblack. One pint of liquiblack shall be considered equal to one pound of lampblack.

2.02 AGGREGATE AND AGGREGATE GRADING

- A. General: Conform to the requirements of the Caltrans Standard Specifications.
- B. Aggregate Size and Gradation: Conform to the requirements of the Caltrans Standard Specifications for 25-mm (1-inch) maximum combined aggregate.

2.03 WATER

- A. General: Conform to the requirements of the Caltrans Standard Specifications, for mixing and curing portland cement concrete and for washing aggregates.

2.04 CLASSIFICATION OF PORTLAND CEMENT CONCRETE

- A. Concrete for the following items shall be designated by the following classes per of the Caltrans Standard Specifications:
 - 1. Vehicular Pavement: Class 2.

2. Curbs, Gutters, and Sidewalks: Minor Concrete.
3. Cast in place Concrete Pipe: The concrete shall consist of a minimum of 564 pounds of Portland cement per cubic yard of concrete.
4. Thrust Blocks: The concrete shall have a minimum compressive strength of 3,000 psi.
5. Sign and Fence Footings: The concrete shall consist of a minimum of 376 pounds of Portland cement per cubic yard of concrete.
6. Water, Storm, and Sanitary Structures: The concrete shall consist of a minimum of 564 pounds of Portland cement per cubic yard of concrete.

2.05 EXPANSION JOINT MATERIAL

- A. Material for expansion joints in portland cement concrete improvements shall be premolded expansion joint fillers conforming to the requirements of ASTM Designation D 1751. Expansion joint material shall be shaped to fit the cross section of the concrete prior to being placed. Suppliers certificates showing conformance with this specification shall be delivered with each shipment of materials delivered to the job site. Unless noted otherwise herein or on the Plans expansion joint thickness shall be as follows:
 1. Curbs, Curb Ramps, Island Paving, Sidewalks, Driveways and Gutter Depressions: 1/4-inch.
 2. Concrete Slope Protection, Gutter Lining, Ditch Lining and Channel Lining: 1/2-inch.
 3. Structures: As indicated.

2.06 REINFORCEMENT AND DOWELS

- A. Bar reinforcement for concrete improvements shall be deformed steel bars of the size or sizes called for on the plans conforming to the requirements of ASTM Designation A 615 for Grade 60 bars. Size and shape for bar reinforcement shall conform to the details shown or called for on the Plans. Substitution of wire mesh reinforcement for reinforcing bars will not be allowed.
- B. Slip dowels, where noted or called for on the plans or detail drawings shall be smooth billet-steel bars as designated and conforming to the requirements of ASTM Designation A 615 for Grade 60 bars. Ends of bars inserted in new work shall be covered with a cardboard tube sealed with cork; no grease or oil shall be used.
- C. Mesh for reinforcement for concrete improvements shall be cold drawn steel wire mesh of the size and spacing called for on the plans conforming to the requirements of ASTM Designation A 1064 for the material and mesh. Size and extent of mesh reinforcement shall conform to the details shown or called for on the plans.
- D. Tie wire for reinforcement shall be eighteen (18) gauge or heavier, black, annealed conforming to the requirements of ASTM Designation A 1064.
- E. Suppliers certificates showing conformance with this specification shall be delivered with each shipment of materials delivered to the job site.

2.07 COLOR AND PATTERN FOR DECORATIVE SURFACES

- A. Colors for decorative surfacing shall be CHROMIX admixtures as manufactured by the L. M. Scofield Company, Schedule A-312.05 or approved equal. The specific color shall be as designated or called for on the Plans.
- B. Patterns for decorative surfacing shall be standard "Bomanite" patterns as copyrighted by the Bomanite Corporation of Palo Alto, California or equal. The

specific pattern shall be as designated or called for on the Plans.

2.08 ACCESSORY MATERIALS

- A. Conform water stops and other items required to be embedded in of Portland Cement Concrete structures to the applicable requirements of the Caltrans Standard Specifications unless otherwise specifically noted or called for on the Plans or detail drawings.
- B. Curing Compounds:
 - 1. Regular Portland Cement Concrete: "Non-Pigmented Curing Compound - chlorinated Rubber Base-Clear" conforming to the requirements contained in the Caltrans Standard Specifications.
 - 2. Color Conditioned Decorative Portland Cement Concrete: LITHOCHROME colorwax as manufactured by the L. M. Scofield Company or approved equal.

2.09 FORMS

- A. Conform to the requirements of the Caltrans Standard Specifications.

2.10 PRECAST CONCRETE STRUCTURES

- A. Conform to the following Sections of Caltrans Standard Specifications:
 - 1. Minor Structures.
 - 2. Flared End Sections.
 - 3. Precast Concrete Structures.

2.11 PORTLAND CEMENT CONCRETE VEHICULAR PAVEMENT

- A. General: See Section 32 13 00 – Rigid Paving.

PART 3 - EXECUTION

3.01 STRUCTURAL EXCAVATION

- A. Structural excavation may be either by hand, or by machine and shall be neat to the line and dimension shown or called for on the plans. Excavation shall be sufficient width to provide adequate space for working therein, and comply with CAL-OSHA requirements.
- B. Where an excavation has been constructed below the design grade, refill the excavation to the bottom of the excavation grade with approved material and compact in place to 95% of the maximum dry density.
- C. Remove surplus excavation material remaining upon completion of the work from the job site, or condition it to optimum moisture content and compact it as fill or backfill on the site.

3.02 SOIL STERILANT

- A. Furnish and apply to areas indicated in accordance with Section 31 31 19 – Vegetation Control.

3.03 BRACING AND SHORING

- A. Conform to California and Federal OSHA requirements.
- B. Place and maintain such bracing and shoring as may be required to support the sides of the excavations for the proper protection of workmen; to facilitate the work; to prevent damage to the facility being constructed; and to prevent damage to adjacent structures or facilities. Remove all bracing and shoring upon completion of the work.

- C. Be solely responsible for all bracing and shoring and, if requested by the Owner's Representative, submit details and calculations to the Owner's Representative. The Owner's Representative may forward the submittal to the Consulting Engineer and/or the California Division of Industrial Safety for their review. The Contractor's submittal shall include the basic design, assumed soils conditions and estimation of forces to be resisted, together with plans and specifications of the materials and methods to be used, and shall be prepared by a civil engineer or structural engineer registered in California. No excavations related to the proposed facility shall precede a response to the submittal by the Owner's Representative.
- D. Be solely responsible for installing and extracting the sheathing in a manner which will not disturb the position or operation of the facility being constructed or adjacent utilities and facilities.

3.04 PLACING CONCRETE FORMS

- A. Form concrete improvements with a smooth and true upper edge. Side of the form with a smooth finish shall be placed next to concrete. Construct forms rigid enough to withstand the pressure of the fresh concrete to be placed without any distortion.
- B. Thoroughly clean all forms prior to placement and coat forms with an approved form oil in sufficient quantity to prevent adherence of concrete prior to placing concrete.
- C. Carefully set forms to the alignment and grade established and conform to the required dimensions. Rigidly hold forms in place by stakes set at satisfactory intervals. Provide sufficient clamps, spreaders and braces to insure the rigidity of the forms.
- D. Provide forms for back and face of curbs, lip of gutters and edge of walks, valley gutters or other surface slabs that are equal to the full depth of the concrete as shown, noted or called for on the Plans. On curves and curb returns provide composite forms made from benders or thin planks of sufficient ply to ensure rigidity of the form.

3.05 PLACING STEEL REINFORCEMENT

- A. Bars shall be free of mortar, oil, dirt, excessive mill scale and scabby rust and other coatings of any character that would destroy or reduce the bond. All bending shall be done cold, to the shapes shown on the plans. The length of lapped splices shall be as follows:
 - 1. Reinforcing bars No. 8, or smaller, shall be lapped at least 45 bar diameters of the smaller bar joined, and reinforced bars Nos. 9, 10, and 11 shall be lapped at least 60 bar diameters of the smaller bars joined, except when otherwise shown on the plans.
 - 2. Splice locations shall be made as indicated on the plans.
- B. Accurately place reinforcement as shown on the plans and hold firmly and securely in position by wiring at intersections and splices, and by providing precast mortar blocks or ferrous metal chairs, spacers, metal hangers, supporting wires, and other approved devices of sufficient strength to resist crushing under applied loads. Provide supports and ties of such strength and density to permit walking on reinforcing without undue displacement.
- C. Place reinforcing to provide the following minimum concrete cover:
 - 1. Surfaces exposed to water: 4-inches.
 - 2. Surfaces poured against earth: 3-inches.
 - 3. Formed surfaces exposed to earth or weather: 2-inches.

- 4. Slabs, walls, not exposed to weather or earth: 1-inch.
- D. Minimum spacing, center of parallel bars shall be two and one half (2-1/2) times the diameter of the larger sized bar. Accurately tie reinforcing securely in place prior to pouring concrete. Placing of dowels or other reinforcing in the wet concrete is not permitted.

3.06 MIXING AND TRANSPORTING PORTLAND CEMENT CONCRETE

- A. Transit mix concrete in accordance with the requirements of ASTM Designation C 94. Transit mix for not less than ten (10) minutes total, not less than three (3) minutes of which shall be on the site just prior to pouring. Mix continuous with no interruptions from the time the truck is filled until the time it is emptied. Place concrete within one hour of the time water is first added unless authorized otherwise by the Owner's Representative.
- B. Do not hand mix concrete for use in concrete structures.

3.07 PLACING PORTLAND CEMENT CONCRETE

- A. Thoroughly wet subgrade when concrete is placed directly on soil. Remove all standing water prior to placing concrete.
- B. Do not place concrete until the subgrade and the forms have been approved.
- C. Convey concrete from mixer to final location as rapidly as possible by methods that prevent separation of the ingredients. Deposit concrete as nearly as possible in final position to avoid re-handling.
- D. Place and solidify concrete in forms without segregation by means of mechanical vibration or by other means as approved by the Owner's Representative. Continue vibration until the material is sufficiently consolidated and absent of all voids without causing segregation of material. The use of vibrators for extensive shifting of fresh concrete will not be permitted.
- E. Concrete in certain locations may be pumped into place upon prior approval by the Owner's Representative. When this procedure requires redesign of the mix, such redesign shall be submitted for approval in the same manner as herein specified for approval of design mixes.

3.08 PLACING ACCESSORY MATERIALS

- A. Place water stops and other items required to be embedded in of portland cement concrete structures at locations shown or required in accordance with the Caltrans Standard Specifications unless otherwise specifically noted or called for on the Plans.
- B. Curing Compounds:
 - 1. Regular Portland Cement Concrete: Apply "Non-Pigmented Curing Compound - chlorinated Rubber Base-Clear" in accordance with Caltrans Standard Specifications.
 - 2. Color Conditioned Decorative Portland Cement Concrete: Apply LITHOCHROME colorwax in accordance with the manufactures instructions.

3.09 EXPANSION JOINTS

- A. Construct expansion joints incorporating premolded joint fillers at twenty (20) foot intervals in all concrete curbs, gutters, sidewalks, median/island paving, valley gutters, driveway approaches and at the ends of all returns. At each expansion joint install one-half inch by twelve inch (1/2" x 12") smooth slip dowels in the positions shown or noted on the detail drawings.

- B. Orient slip dowels at right angles to the expansion joint and hold firmly in place during the construction process by means of appropriate chairs.

3.10 WEAKENED PLANE JOINTS

- A. Construct weakened plane joints in concrete curbs, gutters, sidewalks, median/island paving and valley gutters between expansion joints at ten (10) foot intervals throughout, or as otherwise indicated. Depth of joint score depth to be one-fourth (25%) the thickness of the concrete.
 - 1. Grooved Joints: Form weakened plane joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8-inch. Repeat grooving of weakened plane joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.

3.11 FINISHING CONCRETE

- A. Finish curb and gutter in conformance with the applicable requirements of the Caltrans Standard Specifications as modified herein.
- B. Where monolithic curb, gutter and sidewalk is specified, separate concrete pours will not be allowed.
- C. Provide a medium broom finish to all horizontal surfaces unless otherwise shown.

3.12 FORM REMOVAL

- A. Remove forms without damage to the concrete. Remove all shores and braces below the ground surface, before backfilling.
- B. Do not backfill against concrete until the concrete has developed sufficient strength to prevent damage.
- C. Leave forms for cast-in-place walls in place at least 72 hours after pouring.
- D. Leave edge forms in place at least 24 hours after pouring.

3.13 CONSTRUCTION

- A. Form, place and finish concrete walkways, island paving, valley gutters and driveway approaches in conformance with the applicable requirements of the Caltrans Standard Specifications as modified herein.
- B. Construct new concrete curb, curb and gutter and valley gutters against existing asphalt concrete by removing a minimum of 12-inches of the asphalt concrete to allow placement of curb or gutter forms. Patch pavement with a 6-inch deep lift of asphalt concrete after gutter form is removed.

3.14 CONNECTING TO EXISTING CONCRETE IMPROVEMENTS

- A. New curb, gutter, or sidewalk is to connect to existing improvements to remain by saw cutting to existing sound concrete at the nearest score line, expansion joint or control joint. Drill and insert 1/2-inch diameter by 12-inch long dowels at 24-inches on center into existing improvements. Install pre-molded expansion joint filler at the matching joint.
- B. A cold joint to the existing curb is not acceptable.
- C. All flatwork connections to be flush or conform to 11B-303.2.

3.15 DECORATIVE SURFACING CONSTRUCTION

- A. Decorative surfacing concrete walks, concrete median islands or other installations shall be formed and placed as a concrete slab conforming to the details shown or

noted on the Plans.

3.16 FIELD QUALITY CONTROL

- A. Finish subgrade for concrete improvements shall be subject to approval prior to placement of forms.
- B. No concrete shall be placed prior to approval of forms.
- C. Concrete improvements constructed shall not contain "bird baths" or pond water and shall be smooth and ridge free.
- D. Conform the finish grade at top of curb, flow line of gutter, and the finish cross section of concrete improvements to the design grades and cross sections.
- E. Variation of concrete improvements from design grade and cross section as shown or called for on the plans shall not exceed the tolerances established the Caltrans Standard Specifications.

3.17 RESTORATION OF EXISTING IMPROVEMENTS

- A. Replace in kind all pavement or other improvements removed or damaged due to the installation of concrete improvements.
- B. Remove, landscaping or plantings damaged or disturbed due to the installation of concrete improvements. Replace in kind.

END OF SECTION

SECTION 32 11 00

BASE COURSES

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Aggregate subbase.
- B. Aggregate base.
- C. Cement treated base.
- D. Lime stabilization.

1.02 RELATED DOCUMENTS

- A. ASTM:
 - 1. D 3740, Standard Practice for Minimum Requirement for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
 - 2. E 329, Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection.
 - 3. E 548, Standard Guide for General Criteria Used for Evaluating Laboratory Competence.
- B. Caltrans Standard Specifications:
 - 1. Lime Stabilized Soil.
 - 2. Aggregate Subbases.
 - 3. Aggregate Bases.
 - 4. Cement Treated Bases.

1.03 DEFINITIONS

- A. Geotechnical Testing Agency: An independent testing agency qualified according to ASTM E 329 to conduct soil materials and rock definition testing, as documented according to ASTM D 3740 and ASTM E 548.
- B. Rock: Rock material in beds, ledges, unstratified masses, and conglomerate deposits and boulders of rock material $\frac{3}{4}$ -cubic yards or more in volume that when tested, according to ASTM D 1586, exceeds a standard penetration resistance of 100 blows/2-inches.
- C. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man made stationary features constructed above or below grade.
- D. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below subbase, base or topsoil materials.

1.04 SUBMITTALS

- A. Follow submittal procedures outlined in Section 01 33 00 – Submittal Procedures.
- B. Submit material certificates signed by the material producer and the Contractor, certifying that that each material item complies with, or exceeds the specified requirements.

1.05 QUALITY ASSURANCE

- A. Percentage of compaction specified shall be the minimum acceptable. The percentage represents the ratio of the dry density of the compacted material to the maximum dry density of the material as determined by the procedure set forth in ASTM D 1557.
- B. Do not mix or place cement treated base when the temperature is below is below 36 degrees F or when the ground is frozen.

- C. Finish surface of material to be stabilized prior to lime treatment shall be as specified in the Caltrans Standard Specifications.
- D. Finish surface of the stabilized material after lime treatment shall be as specified in the Caltrans Standard Specifications.
- E. Finish surface of cement treated base shall be as specified in the Caltrans Standard Specifications.
- F. Do not project the finish surface of aggregate subbase above the design subgrade.
- G. Finish grade tolerance at completion of base installation: +0.05'

1.06 PROJECT CONDITIONS

- A. Protect open excavations, trenches, and the like with fences, covers and railings to maintain safe pedestrian and vehicular traffic passage.
- B. Temporarily stockpile material in an orderly and safe manner and in a location approved by the Owner.
- C. Provide dust and noise control in conformance with Division 1 General Requirements.

PART 2 - PRODUCTS

2.01 AGGREGATE SUBBASE

- A. Material: Caltrans Standard Specification.
 - 1. Class 1, 2, or 3: Section 25-1.02B.
 - 2. Class 4: Section 25-1.02C.
 - 3. Class 5: Section 25-1.02D.

2.02 AGGREGATE BASE

- A. Material: Caltrans Standard Specification.
 - 1. Class 2, 1-1/2-inch Maximum:.
 - 2. Class 2, 3/4-inch Maximum:.
 - 3. Class 3: .

2.03 CEMENT TREATED BASE

- A. Materials: Caltrans Standard Specification.

2.04 LIME STABILIZATION

- A. Lime Treatment Material: Conform to the Caltrans Standard Specifications.

PART 3 - EXECUTION

3.01 GENERAL

- A. Placement and compaction of material by flooding, ponding, or jetting will not be permitted.

3.02 WET WEATHER CONDITIONS

- A. Do not place or compact subgrade if above optimum moisture content.

3.03 AGGREGATE SUBBASE

- A. Spreading and Compacting: Conform to Caltrans Standard Specifications.

3.04 AGGREGATE BASE

- A. Spreading and Compacting: Conform to Caltrans Standard Specifications.

3.05 CEMENT TREATED BASE

- A. Cement treated base shall be as follows: Proportioning and Mixing Plant-Mixed: per Caltrans Standard Specifications.

3.06 LIME STABILIZATION

- A. Performing the stabilization shall conform to Caltrans Standard Specifications and the following:
 - 1. Add lime in the amount specified by a Geotechnical Consultant.
 - 2. Lime treat subgrade soils from back of curb to back of curb to a depth specified by a Geotechnical Consultant.

3. Mix in two mixing periods, both with the tines lowered to the same depth. Both mixing periods shall be monitored and verified by a Geotechnical Consultant. The second mixing shall occur at about 36 hours after the initial mixing.
4. Compact and grade the lime mixed subgrade immediately after the second mixing.
5. Compact the lime treated subgrade to 95 percent as determined by ASTM D1557.
6. After application of the curing seal, do not allow traffic on the lime treated material for a period of 7 days in lieu of the 3 days specified in the Caltrans Standard Specifications.
7. Proof-roll the stabilized subgrade after compacting to confirm that a non-yielding surface has been achieved. Yielding areas, if any, shall be mitigated. Mitigation could consist of over-excavation, utilization of stabilization fabric, or chemical treatment. Each case shall be addressed individually in the field by a Geotechnical Consultant.

3.07 DISPOSAL

- A. Lawfully dispose of all unsuitable and excess or surplus material off-site at no cost to the Owner.

END OF SECTION

SECTION 32 12 00

FLEXIBLE PAVING

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Prime coat.
- B. Tack coat.
- C. Asphaltic concrete paving.
- D. Asphaltic concrete overlay and slurry seals.
- E. Speed bumps.
- F. Asphalt curbs.
- G. Pavement grinding.

1.02 RELATED DOCUMENTS

- A. ASTM:
 - 1. D 979: Standard Practice for Sampling Bituminous Paving Mixtures.
 - 2. D 1073: Standard Specification for Fine Aggregate for Asphalt Paving Mixtures.
 - 3. D 1188: Standard Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Coated Samples.
 - 4. D 2041: Standard Test Method for Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures.
 - 5. D 2726: Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Asphalt Mixtures.
 - 6. D 2950: Standard Test Method for Density of Bituminous Concrete in Place by Nuclear Methods.
 - 7. D 3549: Standard Test Method for Thickness or Height of Compacted Bituminous Paving Mixture Specimens.
 - 8. D 3666: Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Mixtures.
- B. Caltrans Standard Specifications.
 - 1. Bituminous Seals.
 - 2. Asphalt Concrete.
 - 3. Geosynthetics.
 - 4. Asphalt Binders.
 - 5. Asphaltic Emulsions.
- C. California Building Code:
 - 1. Accessibility to Public Buildings, Public Accommodations, Commercial Buildings, and Public Housing.
 - 2. Exterior Routes of Travel.

1.03 DEFINITIONS

- A. ASTM: American Society for Testing Materials.

1.04 QUALITY ASSURANCE

- A. Testing Agency: Owner will engage a qualified independent testing agency to perform field inspections and tests and to prepare test reports.
 - 1. Testing agency will conduct and interpret tests and state in each report whether tested work complies with or deviates from specified requirements.
- B. Additional testing, at Contractor's expense, will be performed to determine compliance of corrected Work with specified requirements.
- C. Thickness of Asphaltic Concrete: In-place compacted thickness of asphalt courses will be determined according to ASTM D 3549.
- D. Surface Smoothness: Finished surface of each asphalt course will be tested for compliance with smoothness tolerances.
- E. In-Place Density: Samples of uncompacted paving mixtures and compacted pavement will be secured by testing agency according to ASTM D 979.
 - 1. Reference maximum theoretical density will be determined by averaging results from 4 samples of hot-mix asphalt-paving mixture delivered daily to site, prepared according to ASTM D 2041, and compacted according to job-mix specifications.
 - 2. In-place density of compacted pavement may be determined by testing core samples according to ASTM D 1188 or ASTM D 2726.
 - (a) One core sample may be taken for every 1000 sq. yd. or less of installed pavement, but in no case will fewer than 3 cores be taken.
 - (b) Field density of in-place compacted pavement may also be determined by nuclear method according to ASTM D 2950 and correlated with ASTM D 1188 or ASTM D 2726.

1.05 SUBMITTALS

- A. Follow submittal procedures outlined in Section 01 33 00 – Submittal Procedures.
- B. Job-Mix Designs: Certificates signed by manufacturers certifying that each asphaltic concrete mix complies with requirements.
- C. Material Certificates: Certificates signed by manufacturers certifying that each material complies with requirements.

1.06 PROJECT CONDITIONS

- A. Environmental Limitations:
 - 1. Prime Coat: Minimum surface temperature of 60 deg F at application.
 - 2. Tack Coat: Minimum surface temperature of 60 deg F at application.
 - 3. Asphalt Base Course: Minimum surface temperature of 40 deg F and rising at application.
 - 4. Asphalt Surface Course: Minimum surface temperature of 60 deg F at application.
 - 5. Reinforcing Fabric: Air temperature is 50 deg F and rising and pavement temperature is 40 deg F and rising.

PART 2 - PRODUCTS

2.01 ASPHALTIC CONCRETE

- A. Caltrans Standard Specifications
- B. Asphalt Materials:
 - 1. Asphalt: Caltrans Standard Specification, steam refined paving asphalt.
 - (a) Asphalt Curbs: use grade PG 70-10
 - (b) All other asphalt products: use grade PG 64-10.
 - 2. Prime Coat: per Caltrans Standard Specification
 - 3. Tack Coat: per Caltrans Standard Specification.
 - 4. Asphaltic Emulsion: per Caltrans Standard Specification, for quick-setting type, Grade QS1h anionic or CQS1h cationic.
- C. Aggregates: Conform to Caltrans Standard Specification as applicable.
- D. Storing, Proportioning and Mixing Materials: per Caltrans Standard Specification
- E. Pavement Reinforcing Fabric: per Caltrans Standard Specification.
- F. Sand: ASTM D 1073, Grade No. 2 or 3.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that subgrade is dry and in suitable condition to support paving and imposed loads.
- B. Proof-roll subbase using heavy, pneumatic-tired rollers to locate areas that are unstable or that require further compaction.
- C. Notify Owner in writing of any unsatisfactory conditions. Do not begin paving until these conditions have been satisfactorily corrected.

3.02 PAVEMENT GRINDING

- A. Clean existing paving surface of loose or deleterious material immediately before pavement grinding.
- B. Grind conforms as indicated.

3.03 SOIL STERILANT

- A. Furnish and apply to areas indicated in accordance with Section 31 31 19 – Vegetation Control.

3.04 SURFACE PREPARATION FOR AGGREGATE BASE MATERIALS

- A. General: Immediately before placing asphalt materials remove loose and deleterious material from substrate surfaces and ensure that prepared subgrade is ready to receive paving according to the Caltrans Standard Specification Section
- B. Prime Coat: Apply uniformly over surface of compacted-aggregate base according to the Caltrans Standard Specification Section. Apply enough material to penetrate and seal, but not flood, surface. Allow prime coat to cure for 24 hours minimum.

1. If prime coat is not entirely absorbed within 8 hours after application, spread excess prime coat with hand tools and broadcast sand over surface to blot excess asphalt. Use just enough sand to prevent pickup under traffic. Remove loose sand by sweeping before pavement is placed and after volatiles have evaporated.
 2. Protect primed substrate from damage until ready to receive paving.
- C. Tack Coat: Apply uniformly to all vertical surfaces against which asphaltic concrete is to be placed, including existing surfaces of previously constructed asphalt or portland cement concrete paving and to surfaces abutting or projecting into new asphalt pavement, according to the Caltrans Standard Specification.
1. Allow tack coat to cure undisturbed before paving.
 2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

3.05 SURFACE PREPARATION FOR PAVEMENT AT ASPHALTIC CONCRETE OVERLAYS AND SLURRY SEALS

- A. Pavement Irregularities: Level with asphaltic concrete, Type B, No. 4 maximum.
- B. Pavement Cracks:
1. Less than 1/8-inch wide: Clean of all dirt by compressed air jet, spray and seal with RS-1 asphaltic emulsion.
 2. Wider than 1/8-inch: Clean of all dirt by compressed air jet, spray and seal with RS-1 asphaltic emulsion and skin patch.
- C. Clean surface of all material, such as leaves, dirt, sand, gravel, water and vegetation including roots prior to applying binder of paving asphalt to existing surface.
- D. Oil spots shall be removed with brush and detergents and covered with Oil Spot Sealer by OverKote or an equal product.
- E. Prior to first application in exceptionally hot weather, dampen surface with water. Remove excess water and leave surface slightly damp.

3.06 APPLYING ASPHALT PAVEMENT OVERLAYS AND SLURRY SEALS

- A. Use OverKote Asphalt Pavement Coating or equal product.
- B. Apply at a rate of 25 gallons per 1,000 sf of surface area.
- C. Follow all manufacturers' recommendations for preparation and applications procedure of the products used.
- D. Apply second coat as soon as first coat is dry.

3.07 PAVEMENT REINFORCING FABRIC

- A. Protect from exposure to ultraviolet rays until placed.
- B. Reject rolls with broken or damaged cores, or factory wrinkled fabric that prevents wrinkle free placement.
- C. Place with binder of paving asphalt in accordance with Caltrans Standard Specifications.

3.08 ASPHALTIC CONCRETE SPREADING AND COMPACTING EQUIPMENT

- A. Spreading Equipment: per Caltrans Standard Specification.
- B. Compaction Equipment: per Caltrans Standard Specification

3.09 ASPHALTIC CONCRETE PLACEMENT

- A. Place, spread and compact asphaltic concrete to required grade, cross section, and thickness according to the Caltrans Standard Specification Sections
- B. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

3.10 JOINTS

- A. Construct joints to ensure continuous bond between adjoining paving sections according to the Caltrans Standard Specification.
 - 1. Construct joints free of depressions with same texture and smoothness as other sections of asphalt course.
 - 2. Clean contact surfaces and apply tack coat.
 - 3. Offset longitudinal joints in successive courses a minimum of 6 inches.
 - 4. Offset transverse joints in successive courses a minimum of 24 inches.
 - 5. Compact joints as soon as asphaltic concrete will bear roller weight without excessive displacement.

3.11 COMPACTION

- A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact according to the Caltrans Standard Specification
- B. Compaction Requirements: Average Density to be 92 percent of reference maximum theoretical density according to ASTM D 2041, but not less than 90 percent nor greater than 96 percent.
- C. Finish Rolling: Finish roll paved surfaces to remove roller marks while asphalt is still warm.
- D. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while still hot, with back of rake or smooth iron. Compact thoroughly using tamper or other satisfactory method.
- E. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh asphalt. Compact by rolling to specified density and surface smoothness.
- F. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.12 ASPHALT CURBS

- A. Construction: Place over compacted surfaces according to Caltrans Standard Specification Section 39-7.01 as specified for dikes. Apply a light tack coat prior to construction, unless pavement surface is still tacky and free of dust.
- B. Shape: Place asphaltic concrete to curb cross section indicated.

3.13 SPEED BUMPS

- A. Construct speed bumps over compacted pavement surfaces according to Caltrans Standard Specification. Apply a light tack coat prior to construction, unless pavement surface is still tacky and free of dust.
- B. Place asphaltic concrete by hand using a template/screed designed to result in speed bump cross-section indicated after compaction.
- C. Compact speed bumps with 8-ton static roller.

3.14 INSTALLATION TOLERANCES

- A. Asphalt Pavement:
 - 1. Course thickness and surface smoothness within the tolerances in the Caltrans Standard Specification
 - 2. Total Thickness: Not less than indicated.
- B. Trench Patch:
 - 1. Compacted surface: Within 0.01 foot of adjacent pavement.
 - 2. Do not create ponding.

END OF SECTION

SECTION 32 13 00

RIGID PAVING

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Furnishing, placing, spreading, compacting and shaping portland cement concrete pavement with undoweled transverse weakened plane joints, for vehicular traffic.
- B. Form construction and use in placing portland cement concrete pavement.
- C. Joints for portland cement concrete pavement.
- D. Finishing portland cement concrete pavement.
- E. Curing and protecting portland cement concrete pavement.

1.02 RELATED DOCUMENTS

- A. AASHTO Standard Specifications
 - 1. T 53: Standard Method of Test for Softening Point of Bitumen (Ring-and-Ball Apparatus).
- B. ASTM Standards
 - 1. A 615: Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
 - 2. A 775: Standard Specification for Epoxy-Coated Steel Reinforcing Bars.
 - 3. A 934: Standard Specification for Epoxy-Coated Prefabricated Steel Reinforcing Bars.
 - 4. C 881: Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete.
 - 5. D 2628: Standard Specification for Preformed Polychloroprene Elastomeric Joint Seals for Concrete Pavements.
 - 6. D 2835: Standard Specification for Lubricant for Installation of Preformed Compression Seals in Concrete Pavements.
 - 7. D 6690: Standard Specification for Joint and Crack Sealants, Hot-Applied , for Concrete and Asphalt Pavements.
 - 8. D 3963: Standard Specification for Fabrication and Jobsite Handling of Epoxy-Coated Steel Reinforcing Bars.
- C. Caltrans Standard Specifications:

1. Concrete Pavement.
2. Reinforcement.
3. Concrete.
4. Epoxy.

D. Caltrans Standard Plans:

1. Portland Cement Concrete Pavement (Undoweled Transverse Joints).
2. Portland Cement Concrete Pavement Joint and End Anchor Details.

1.03 DEFINITIONS

- A. AASHTO: American Association of State Highway and Transportation Officials.
- B. ASTM: American Society for Testing and Materials.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer of ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.
 1. Manufacturer must be certified according to the National Ready Mix Concrete Plant Certification Program.
- B. Installer Qualification: An experienced installer who has completed pavement work similar in material, design and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- C. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant and each aggregate from one source.

1.05 SUBMITTALS

- A. Follow submittal procedures outlined in Section 01 33 00 – Submittal Procedures.
- B. Design Mixes: For each concrete pavement mix. Include alternate mix designs when characteristics of materials, project conditions, weather, test results or other circumstances warrant adjustments.
- C. Material Certificates: Signed by manufacturers certifying that each of the following materials complies with requirements.
 1. Cementitious materials and aggregates.
 2. Steel reinforcement and reinforcement accessories.
 3. Admixtures.

4. Curing compound.
5. Applied finish material.
6. Bonding agent or adhesive.
7. Joint filler.
8. Joint Sealant.
9. Tie Bars.
10. Epoxy.
11. Backer Rods.

PART 2 - PRODUCTS

2.01 PORTLAND CEMENT CONCRETE

- A. General: Conform to Caltrans Standard Specifications. Use Class 2 Concrete.

2.02 TIE BARS

- A. Deformed reinforcing steel bars conforming to the requirements of ASTM Designation A 615/A (615M), Grade 40 or 60 (Grade 300 or 420).
- B. Epoxy-coat in conformance with the provisions in Caltrans Standard Specifications, except that references made to ASTM Designation D 3963/D 3963M shall be deemed to mean ASTM Designation A 934/A 934M or A 775/775M.
- C. Do not bend tie bars.

2.03 EPOXY

- A. Bond tie bars to existing concrete with epoxy resin conforming to "Epoxy Resin Adhesive for Bonding Freshly Mixed Concrete to Hardened Concrete," of the Caltrans Standard Specifications.

2.04 SILICONE JOINT SEALANT

- A. Furnish low modulus silicone joint sealant in a one-part silicone formulation. Do not use acid cure sealants. Compound to be compatible with the surface to which it is applied and conform to the following requirements:

Specification	Test Method	Requirement
Tensile stress, 150% elongation, 7-day cure at 25° ± 1°C and 45% to 55% R.H. ^e	ASTM D 412 (Die C)	310 kPa max.
Flow at 25° ± 1°C	ASTM C 639 ^a	Shall not flow from channel
Extrusion Rate at 25° ± 1°C	ASTM C 603 ^b	75-250 g/min.
Specific Gravity	ASTM D 792 Method A	1.01 to 1.51
Durometer Hardness, at -18°C, Shore A, cured 7 days at 25° ± 1°C	ASTM C 661	10 to 25
Ozone and Ultraviolet Resistance, after 5000 hours	ASTM C 793	No chalking, cracking or bond loss
Tack free at 25° ± 1°C and 45% to 55% R.H. ^e	ASTM C 679	Less than 75 minutes
Elongation, 7 day cure at 25° ± 1°C and 45% to 55% R.H. ^e	ASTM D 412 (Die C)	500 percent min.
Set to Touch, at 25° ± 1°C and 45% to 55% R.H. ^e	ASTM D 1640	Less than 75 minutes
Shelf Life, from date of shipment	—	6 months min.
Bond, to concrete mortar-concrete briquets, air cured 7 days at 25° ± 1°C	AASHTO T 132 ^c	345 kPa min.
Movement Capability and Adhesion, 100% extension at -18°C after, air cured 7 days at 25° ± 1°C, and followed by 7 days in water at 25° ± 1°C	ASTM C 719 ^d	No adhesive or cohesive failure after 5 cycles

Notes:

ASTM Designation: C 639 Modified (15 percent slope channel A).

ASTM Designation: C 603, through 3-mm opening at 345 kPa.

Mold briquets in conformance with the requirements in AASHTO Designation: T 132, sawed in half and bonded with a 1.5 mm maximum thickness of sealant and tested in conformance with the requirements in AASHTO Designation: T 132. Briquets shall be dried to constant mass at 100 ± 5° C.

Movement Capability and Adhesion: Prepare 305 mm x 25 mm x 75 mm concrete blocks in conformance with the requirements in ASTM Designation: C 719. A sawed face shall be used for bond surface. Seal 50 mm of block leaving 12.5 mm on each end of specimen unsealed. The depth of sealant shall be 9.5 mm and the width 12.5 mm.

a. R.H. equals relative humidity.

B. Formulate the silicon joint sealant to cure rapidly enough to prevent flow after application on grades of up to 15 percent.

C. Furnish to the Owner a Certificate of Compliance. Accompany certificate with a certified test report of the results of the required tests performed on the sealant material within the

previous 12 months prior to proposed use. Provide the certificate and accompanying test report for each lot of silicone joint sealant prior to use on the project.

2.05 ASPHALT RUBBER JOINT SEALANT

- A. Conform to the requirements of ASTM Designation: D 6690 as modified herein or to the following:
 - 1. Provide a mixture of paving asphalt and ground rubber. Ground rubber to be vulcanized or a combination of vulcanized and de-vulcanized materials ground so that 100 percent will pass a 2.36-mm sieve and contain not less than 22 percent ground rubber, by mass. Modifiers may be used to facilitate blending.
 - 2. The Ring and Ball softening point shall be 57°C minimum, when tested in conformance with the requirements in AASHTO Designation: T 53.
 - 3. Provide asphalt rubber sealant material capable of being melted and applied to cracks and joints at temperatures below 204°C.
- B. The penetration requirement of Section 4.2 of ASTM Designation: D 6690 do not apply. The required penetration at 25°C, 150g, 5s, shall not exceed 120.
- C. The resilience requirement of Section 4.5 of ASTM Designation: D 6690 do not apply. The required resilience, when tested at 25°C, shall have a minimum of 50 percent recovery.
- D. Accompany each lot of asphalt rubber joint sealant shipped to the job site, whether as specified herein or conforming to the requirements of ASTM Designation D 6690, as modified herein, by a Certificate of Compliance, storage and heating instructions and precautionary instructions for use.
- E. Heat and place in conformance with the manufacturer's written instructions and the details shown on the plans. Provide manufacturer's instructions to the Owner. Do not place when the pavement surface temperature is below 10°C.

2.06 PREFORMED COMPRESSION JOINT SEALANT

- A. Material: ASTM Designation: D 2628.
 - 1. Number of cells: 5 or 6.
 - 2. Lubricant Adhesive: ASTM Designation D 2835.
 - 3. Install compression seals along with lubricant adhesive according to the manufacturer's recommendations. Submit manufacture's recommendations to the Owner's Representative`.
- B. Accompany each lot of compression seal and lubricant adhesive by a Certificate of Compliance, storage instructions and precautionary instructions for use. Also submit the manufacturer's data sheet with installation instructions and recommended model or type of preformed compression seal for the joint size and depth as shown on the plans. Show

evidence that the selected seal is being compressed at level between 20 and 50 percent at all times for the joint width and depth shown on the plans.

2.07 BACKER RODS

- A. Provide backer rods that have a diameter prior to placement at least 25 percent greater than the width of the saw cut after sawing and are expanded, crosslinked, closed-cell polyethylene foam that is compatible with the joint sealant so that no bond, adverse reaction occurs between the rod and sealant. In no case use a hot pour sealant that will melt the backer rod. Submit a manufacturer's data sheet verifying that the backer rod is compatible with the sealant to be used.

PART 3 - EXECUTION

3.01 WATER SUPPLY

- A. Conform to Caltrans Standard Specifications.

3.02 SUBGRADE

- A. Conform to Caltrans Standard Specifications.

3.03 SOIL STERILANT

- A. Furnish and apply to areas indicated in accordance with Section 31 31 19 – Vegetation Control.

3.04 PLACING

- A. Conform to Caltrans Standard Specifications.

3.05 SPREADING COMPACTING AND SHAPING

- A. Conform to Caltrans Standard Specifications.
 - 1. Stationary Side Form Construction: per Caltrans Standard Specifications.
 - 2. Slip Form Construction: per Caltrans Standard Specifications.

3.06 INSTALLING TIE BARS

- A. Install at longitudinal contact joints, longitudinal weakened plane joints, and transverse contact joints as shown on the plans. In no case, shall any consecutive width of new portland cement concrete pavement tied together with tie bars exceed 15 meters. In no case shall tie bars be used at a joint where portland cement concrete and asphalt concrete pavements abut.
- B. Tie bars shall be installed at longitudinal joints by one of the 3 following methods:

1. Drilling and bonding in conformance with the details shown on the plans. Provide a two-component, epoxy-resin, conforming to the requirements of ASTM Designation: C 881, Type V. Grade 3 (Non-Sagging), Class shall be as follows:

<u>Temperature of Concrete</u>	<u>Required Class of Epoxy Resin</u>
Lower than 40° F (4.5 °C)	A
40° F (4.5° C) through 60° F (15.5° C)	B
Above 60° F (15.5° C)	C

2. Provide, at least 7 days prior to start of work, a Certificate of compliance and a copy of the manufacturer's recommended installation procedure. The drilled holes shall be cleaned in accordance with the epoxy manufacturer's instructions and shall be dry at the time of placing the epoxy and tie bars. Immediately after inserting the tie bars into the epoxy, the tie bars shall be supported as necessary to prevent movement during the curing and shall remain undisturbed until the epoxy has cured a minimum time as specified by the manufacturer. Tie bars that are improperly bonded, as determined by the Owner, will be rejected. If rejected, adjacent new holes shall be drilled, as directed by the Owner, and new tie bars shall be placed and securely bonded to the concrete. All work necessary to correct improperly bonded tie bars shall be performed at the Contractor's expense.
3. Insert the tie bars into the plastic slip-formed concrete before finishing the concrete. Inserted tie bars shall have full contact between the bar and the concrete. When tie bars are inserted through the pavement surface, the concrete over the tie bars shall be reworked and refinished to such an extent that there is no evidence on the surface of the completed pavement that there has been any insertion performed. Any loose tie bars shall be replaced by drilling and grouting into place with epoxy as described in method 1 above at the Contractor's expense.
4. By using threaded dowel splice couplers fabricated from deformed bar reinforcement material, free of external welding or machining. Threaded dowel splice couplers shall be accompanied by a Certificate of Compliance and installation instructions. Installation of threaded dowel splice couplers shall conform to the requirements of the manufacturer's recommendations.

3.07 JOINTS

- A. Conform to Caltrans Standard Specifications, except that tie bars shall be as specified under Part 2, Products.
 1. Transverse Contact Joints: per Caltrans Standard Specifications.
 - (a) Construct a transverse contact (construction) joint at the end of each day's work, or where concrete placement is interrupted for more than 30 minutes, to coincide with the next weakened plane joint location.
 - (b) If sufficient concrete has not been mixed to form a slab to match the next weakened plane joint, when an interruption occurs, the excess concrete shall be

removed and disposed of back to the last preceding joint. The cost of removing and disposing of any excess concrete shall be at the Contractor's expense. Any excess material shall become the property of the Contractor and shall be properly disposed of.

(c) A metal or wooden bulkhead (header) shall be used to form the joint. The bulkhead shall be designed to accommodate the installation of tie bars.

2. Weakened Plane Joints: Conform to Caltrans Standard Specifications, except that the insert method of forming joints in pavement shall not be used.

3.08 FINISHING

- A. Conform to the Caltrans Standard Specifications.

3.09 CURING

- A. Conform to the Caltrans Standard Specifications.

3.10 SEALING JOINTS

- A. Liquid Joint Sealant Installation.

1. The joint sealant detail for transverse and longitudinal joints, as shown on the plans, shall apply only to weakened plane joints. Construct weakened plane joints by the sawing method. Should grinding or grooving be required over or adjacent to any joint after sealant has been placed, completely remove the joint material and disposed of, and replace at the Contractor's expense. Recess sealant below the final finished surface as shown on the plans.
2. At the Contractor's option, transverse weakened plane joints shall be either Type DSC or Type SSC as shown on the plans. Longitudinal weakened plane joints shall be Type SSC only as shown on the plans.
3. Seven days after the concrete pavement placement and not more than 4 hours before placing backer rods and joint sealant materials, clean the joint walls by the dry sand blast method and other means as necessary to completely remove from the joint all objectionable material such as soil, asphalt, curing compound, paint and rust. After cleaning the joint, remove all traces of sand, dust and loose material from and near the joint for a distance along the pavement surfaces of at least 50 mm on each side of the joint by the use of a vacuum device. Remove surface moisture at the joints by means of compressed air or moderate hot compressed air or other means approved means. Do not use drying procedures that leave a residue or film on the joint wall. Sandblasting equipment shall have a maximum nozzle diameter size of 6 ± 1 mm and a minimum pressure of 0.62-MPa.
4. Install backer rod as shown on the plans. Provide an expanded, closed-cell polyethylene foam backer rod that is compatible with the joint sealant so that no bond or adverse reaction occurs between the rod and sealant. Install backer rod when the temperature of the portland cement concrete pavement is above the dew point of the air and when the air temperature is 4°C or above. Install backer rod

when the joints to be sealed have been properly patched, cleaned and dried. Do not use a method of placing backer rod that leave a residue or film on the joint walls.

5. Immediately after placement of the backer rod, place the joint sealant in the clean, dry, prepared joints as shown on the plans. Apply the joint sealant by a mechanical device with a nozzle shaped to fit inside the joint to introduce the sealant from inside the joint. Apply adequate pressure to the sealant to ensure that the sealant material is extruded evenly and that full continuous contact is made with the joint walls. After application of the sealant recess the surface of the sealant as shown on the plans.
6. Any failure of the joint material in either adhesion or cohesion of the material will be cause for rejection of the joint. Conform the finished surface of joint sealant to the dimensions and allowable tolerances shown on the plans. Rejected joint materials or joint material whose finished surface does not conform to the dimensions shown on the plans shall be repaired or replaced, at the Contractor's expense, with joint material that conforms to the requirements.
7. After each joint is sealed, remove all surplus joint sealer on the pavement surface. Traffic shall not be permitted over the sealed joints until the sealant is tack free and set sufficiently to prevent embedment of roadway debris into the sealant.

B. Preformed Compression Joint Seal Installation

1. The compression seal alternative joint detail for transverse and longitudinal joints, as shown on the plans, shall apply only to weakened plane joints. Construct weakened plane joints by the sawing method. Should grinding or grooving be required over or adjacent to any joint after the compression seal has been placed, completely remove the joint materials and disposed of, and replace at the Contractor's expense. Compression seal shall be recessed below the final finished surface as shown on the plans.
2. At the Contractor's option, transverse weakened plane joints shall be either Type DSC or Type SSC as shown on the plans. Longitudinal weakened plane joints shall be Type SSC only as shown on the plans.
3. Seven days after the concrete pavement placement and not more than 4 hours before placing preformed compression joint seals, clean the joint walls by the dry sand blast method and other means as necessary to completely remove from the joint all objectionable material such as soil, asphalt, curing compound, paint and rust. After cleaning the joint, remove all traces of sand, dust and loose material from and near the joint for a distance along the pavement surfaces of at least 50 mm on each side of the joint by the use of a vacuum device. Remove surface moisture at the joints by means of compressed air or moderate hot compressed air or other means. Do not use drying procedures that leave a residue or film on the joint wall. Sandblasting equipment shall have a maximum nozzle diameter size of 6 ± 1 mm and a minimum pressure of 0.62-MPa.

3.11 PROTECTING CONCRETE PAVEMENT

- A. Conform to Caltrans Standard Specifications.

END OF SECTION

SECTION 33 05 16

UTILITY STRUCTURES

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Manhole structures for gravity storm drain and sanitary sewer utilities.

1.02 RELATED DOCUMENTS

A. AASHTO:

- 1. M 199: Standard Specification for Precast Reinforced Concrete Manhole Sections.

B. ASTM:

- 1. A 615/A615M: Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
- 2. C 478: Standard Specification for Circular Precast Reinforced Concrete Manhole Sections.
- 3. C 1244: Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test Prior to Backfill.

C. Caltrans Standard Specifications.

- 1. Concrete Structures.
- 2. Miscellaneous Metal.

D. California Building Code.

- 1. Exterior Routes of Travel.

1.03 DEFINITIONS

- A. AASHTO: American Association of State Highway and Transportation Officials.

- B. ASTM: American Society for Testing Materials.

1.04 SUBMITTALS

- A. Follow submittal procedures outlined in Section 01 33 00 – Submittal Procedures.

- B. Product data for the following:

- 1. Cleanout plugs or caps.

- C. Shop drawings: Include plans, elevations, details and attachments for the following:

1. Precast concrete manholes, frames and covers.
2. Precast concrete clean out boxes and box covers.
- D. Design Mix Reports and Calculations: For each class of cast-in-place concrete.
- E. Field Test Reports: Indicate and interpret test results for compliance with performance.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Handle precast concrete manholes according to manufacturer's written instructions.
- B. Protect imported bedding and backfill material from contamination by other materials.

PART 2 - PRODUCTS

2.01 CLEANOUTS

- A. Piping: Same as sanitary sewer line if possible.
- B. Top Cap: Threaded and of same material as piping if possible.
- C. Box Size: As required to provide access and allow easy removal and reinstallation of cap.
- D. Box Types:
 1. Landscape Areas: Portland cement concrete box and box cover (bolt-down), light duty.
 2. Traffic Areas: Portland cement concrete box and box cover or steel or cast iron cover, heavy duty, both box and cover (bolt down) to be rated for AASHTO H20 loading.
- E. Box Cover Markings: "S.D." for storm drain cleanouts, "S.S." for sanitary sewer cleanouts, unless otherwise specified.
- F. Available Manufacturers: Subject to compliance with requirements, box manufacturers offering products that may be incorporated into the Project include, but are not limited to the following:
 1. Associated Concrete Products, Inc. (Santa Ana, California) (Tel. 714-557-7470).
 2. Brooks Products Inc. (El Monte, California) (Tel. 818-443-3017).
 3. Christy Concrete Products, Inc. (Fremont, California) (Tel. 800-486 7070).

2.02 MANHOLES

- A. General: Size, shape, configuration, depth, etc. of manhole and frame and cover shall be

as indicated.

B. Portland Cement Concrete and Reinforcing:

1. Cast-In-Place Portion: Use Class A Concrete per Caltrans Standard Specification, and ASTM A615 Grade 60 reinforcing steel bars.
2. Precast Portion: ASTM C 478. Rate for AASHTO H20 loading in traffic areas.

C. Frames and Covers: As indicated and in accordance with Caltrans Standard Specification.

D. Steps: ASTM C 478 or AASHTO M 199. Manufacture from deformed, ½-inch steel reinforcement rod complying with ASTM A 615 and encased in polypropylene complying with ASTM D4101. Include pattern designed to prevent lateral slippage off step.

E. Force Main Piping Access Openings:

1. General: As indicated.

2.03 JOINT SEALANT FOR STRUCTURES AND MANHOLES

A. Mortar: per Caltrans Standard Specification.

1. Use to seal around pipes at connections to structures and manholes. Also use to seal joints between precast sections of structures and manholes.

B. Gaskets: Preformed flexible rubber or plastic gasket.

1. Rubber Gaskets: ASTM C443.
2. Plastic Gaskets: Federal Specification SS-S-00210 (GSA-FSS), Type I, Rope Form; or alternate standard which may exist.

PART 3 - EXECUTION

3.01 CLEANOUT INSTALLATION

A. General: Install as indicated.

3.02 MANHOLE INSTALLATION

A. General: Install as indicated.

3.03 TESTING OF MANHOLES ON GRAVITY LINES

A. At the option of the Contractor, either the following hydrostatic or vacuum test shall be performed.

B. Hydrostatic Test:

1. Insert inflatable plugs in all sewer inlets and outlets.

2. Fill the manhole with water to a point six inches below the base of the manhole frame.
3. Maintain the water at this point for one hour to allow time for absorption.
4. Begin one-hour test period. Measure the amount of water added in one-hour period to maintain the water level at six inches below the base of the manhole frame. Do not allow water level to drop more than 25% of the manhole depth.
5. Determine the allowable leakage by the following formula.
6. $L = 0.0002 \times D \times H^{1/2}$
7. L = Allowable leakage, gallons per minute.
8. D = Depth of manhole from top to bottom, feet.
9. H = Head of water in feet as measured from the surface of the water in the manhole to the sewer line invert or to the prevailing ground water surface outside the manhole. The lesser height governs.
10. If the leakage exceeds the allowable, determine the cause, take remedial action and re-test the manhole. If the leakage is less than the allowable and leaks are observed, repair the leaks.

C. Vacuum Test:

1. General: Test in accordance with ASTM C 1244.
2. Test prior to backfilling around the manhole.
3. Test Preparation: Plug all lift holes and pipes entering or exiting the manhole.
4. Place test head inside the top section of the manhole's cone section and inflate in accordance with the manufacturers instructions.
5. Draw a vacuum of 10-inches of mercury and shut the pump off.
6. With the valve closed, the time for the vacuum to drop 9-inches shall be measured.
7. The manhole shall pass the test if the time is greater than 60 seconds for a 48-inch diameter manhole, 75 seconds for a 60-inch diameter manhole and 90 seconds for a 72-inch diameter manhole.
8. If the manhole fails the initial test, make necessary repairs with a non-shrink grout while the vacuum is still being drawn. Retest until a satisfactory test is obtained.

END OF SECTION

SECTION 33 10 00

WATER UTILITIES

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Site water distribution system for domestic services up to 5 feet of any on-site building being served.
- B. Domestic water transmission or distribution system within a roadway or street right-of-way.

1.02 RELATED SECTIONS

- A. Section 31 23 33 – Trenching and Backfilling.
- B. Section 32 05 23 – Concrete for Exterior Improvements.

1.03 RELATED DOCUMENTS

A. ASTM:

- 1. A 536: Standard Specification for Ductile Iron Castings.
- 2. B 88: Standard Specifications for Seamless Copper Water Tube.
- 3. D 1785: Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
- 4. D 2564: Standard Specifications for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems.

B. AWWA:

- 1. C104: Cement-Mortar Lining for Ductile-Iron Pipe and Fittings.
- 2. C105: Polyethylene Encasement for Ductile-Iron Pipe Systems.
- 3. C110: Ductile-Iron and Gray-Iron Fittings, 3 In. Through 48 In. (76 mm Through 1,219 mm) for Water.
- 4. C111: Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
- 5. C115: Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges.
- 6. C150: Thickness Design of Ductile Iron Pipe.
- 7. C151: Ductile-Iron Pipe, Centrifugally Cast.
- 8. C153: Ductile- Iron Compact Fittings.

9. C200: Steel Water Pipe-6 In. (150 mm) and larger.
10. C203: Coal-Tar Protective Coatings and Linings for Steel Water Pipelines-Enamel and Tape-Hot Applied.
11. C205: Cement-Mortar Protective Lining and Coating for Steel Water Pipe- 4 In. and Larger-Shop Applied.
12. C207: Steel Pipe Flanges for Waterworks Service-Sizes 4 In. Through 144 In. (100 mm Through 3,600 mm).
13. C208: Dimensions for Fabricated Steel Water Pipe Fittings.
14. C209: Cold-Applied Tape Coatings for Steel Water Pipe, Special Sections, Connections and Fittings.
15. C210: Liquid-Epoxy Coatings and Linings for Steel Water Pipe and Fittings.
16. C213: Fusion-Bonded Epoxy Coatings and Linings for Steel Water Pipe and Fittings.
17. C214: Tape Coatings for Steel Water Pipe.
18. C218: Liquid Coatings for Aboveground Steel Water Pipelines and Fittings.
19. C219: Bolted Sleeve-Type Couplings for Plain-End Pipe.
20. C500: Metal-Seated Gate Valves for Water Supply Service.
21. C504: Rubber-Seated Butterfly Valves, 3 In. (75 mm) through 72 In. (1,800 mm).
22. C507: Ball Valves 6 In. through 60 In. (150 mm Through 1,500 mm).
23. C508: Swing-Check Valves for Waterworks Service, 2-In. Through 48-In. (50-mm Through 1200-mm) NPS.
24. C509: Resilient-Seated Gate Valves for Water Supply Service.
25. C510: Double Check Valve Backflow Prevention Assembly.
26. C511: Reduced-Pressure Principle Backflow Prevention Assembly.
27. C512: Air Release, Air/Vacuum, and Combination Air Valves for Water and Wastewater Service.
28. C550: Protective Interior Coatings for Valves and Hydrants.
29. C600: Installation of Ductile-Iron Mains and Their Appurtenances.
30. C605: Underground Installation of Polyvinyl Chloride (PVC) and Molecularly Oriented Polyvinyl Chloride (PVCO) Pressure Pipe and Fittings.
31. C606: Grooved and Shouldered Joints.
32. C651: Disinfecting Water Mains.

- 33. C800: Underground Service Line Valves and Fittings.
- 34. C900: Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 In. Through 60 In. (100mm Through 1,500 mm).
- 35. C901: Polyethylene (PE) Pressure Pipe and Tubing, ½ In. (13mm) Through 3 In. (76mm) for Water Service.
- 36. C905: Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 14 In. Through 48 In. (350 mm Through 1,200 mm) for Water Transmission and Distribution.
- 37. C906: Polyethylene (PE) Pressure Pipe and Fittings, 4 In. Through 65 In. (100 mm Through 1,650 mm), for Waterworks.
- 38. C907: Injection-Molded Polyvinyl Chloride (PVC) Pressure Fittings, 4 In. Through 12 In. (100 mm Through 300 mm), for Water, Wastewater, and Reclaimed Water Service.
- 39. M11: Steel Pipe - A Guide for Design and Installation.
- 40. M23: PVC Pipe – Design and Installation.
- 41. M41: Ductile-Iron Pipe and Fittings.

1.04 DEFINITIONS

- A. AASHTO: American Association of State Highway and Transportation Officials.
- B. ASTM: American Society for Testing Materials.
- C. AWWA: American Waterworks Association
- D. DI: Ductile iron.
- E. DIP: Ductile iron pipe.
- F. FM: Factory Mutual.
- G. NSF: National Sanitation Foundation.
- H. PCC: Portland cement concrete.
- I. PE: Polyethylene.
- J. PVC: Polyvinyl Chloride.
- K. UL: Underwriters Laboratory.

1.05 SYSTEM PERFORMANCE REQUIREMENTS

- A. Minimum Internal Pressures: As indicated on plans.
- B. External Load: Earth load indicated by depth of cover plus AASHTO H20 live load unless

indicated otherwise.

1.06 SUBMITTALS

- A. Follow submittal procedures outlined in Section 01 33 00 – Submittal Procedures.
- B. Product Data: For the following:
 - 1. Piping materials and fittings.
 - 2. Pipe couplings.
 - 3. Flexible pipe fittings.
 - 4. Restrained pipe fittings.
 - 5. High deflection fittings/ball joints.
 - 6. Expansion joints.
 - 7. Flexible expansion joints.
 - 8. Gate valves.
 - 9. Butterfly valves.
 - 10. Check valves.
 - 11. Air and vacuum relief valves.
 - 12. Blow-off valves.
 - 13. Pressure reducing valves.
 - 14. Pressure sustaining valves.
 - 15. Ball valves.
 - 16. Post indicator valves.
 - 17. Backflow preventers.
 - 18. Precast valve boxes and box covers.
- C. Shop drawings: Include plans, elevations, details and attachments.
 - 1. Precast and cast in-place vaults and covers.
 - 2. Wiring diagrams for alarm devices.
- D. Field test reports: Indicate and interpret test results for compliance with the Project requirements.

1.07 QUALITY ASSURANCE

- A. Comply with requirements of utility supplying water. Do not operate existing valves or tap existing piping without written permission and/or presence of utility company representative.
- B. Comply with the following requirements and standards:
 - 1. NSF 61: "Drinking Water System Components-Health Effects" for materials for potable water.
 - 2. NFPA 70: "National Electric Code" for electrical connections between wiring and electrically operated devices.
- C. Provide listing/approval stamp, label, or other marking on piping and specialties made to a specified standard.

1.08 MATERIAL DELIVERY, STORAGE AND HANDLING

- A. Preparation for Transport: Prepare valves, according to the following:
 - 1. Ensure that valves are dry and internally protected against rust and corrosion.
 - 2. Protect valves against damage to threaded ends and flange faces.
 - 3. Set Valves in best position for handling. Set valves closed to prevent rattling.
- B. Deliver piping with factory-applied end-caps. Maintain end-caps through shipping, storage and handling to prevent pipe end damage and to prevent entrance of dirt, debris and moisture.
- C. Handling: Use slings to handle valves whose size requires handling by crane or lift. Rig valves to avoid damage to exposed parts. Do not use handwheels or stems as lifting or rigging points.
- D. During Storage: Use precautions for valves, according to the following.
 - 1. Do not remove end protectors, unless necessary for inspection, then reinstall for storage.
 - 2. Protection from Weather: Store indoors and maintain temperature higher than ambient dew-point temperature. Store indoors and maintain temperature higher than ambient dew point temperature. Support off the ground or pavement in watertight enclosures when outdoor storage is necessary.
- E. Do not store plastic pipe and fittings in direct sunlight.
- F. Protect pipe, fittings, flanges, seals and specialties from moisture, dirt and damage.
- G. Protect linings and coatings from damage.
- H. Handle precast boxes, vaults and other precast structures according to manufacturer's written instructions.

- I. Protect imported bedding and backfill material from contamination by other materials.

1.09 COORDINATION

- A. Coordinate connection to existing water mains with water utility supplying water.
- B. Coordinate piping materials, sizes, entry locations, and pressure requirements with building domestic water distribution.

PART 2 - PRODUCTS

2.01 SMALL-SIZE SERVICE PIPES

- A. Copper Pipe: Sizes ¾-inch through 2-inch.
 - 1. Pipe and Fittings: ASTM B 88, Type K, seamless water tube, annealed.
 - 2. Joints: Restrain by couplings.
- B. PE Plastic Pipe: Sizes ½-inch through 3-inch.
 - 1. Pipe and Fittings: AWWA C901.
 - 2. Joints: Restrain with clamps or heat-fusion.
- C. PVC Pipe: Sizes 1/8-inch through 3 inch.
 - 1. Pipe and Fittings: ASTM D 1785, Schedule 40
 - 2. Joints: Restrain with solvent cement. Do not use threaded pipe.
 - 3. Solvent Cement: ASTM D2564.

2.02 LARGE-SIZE SERVICE AND DISTRIBUTION PIPES

- A. DIP: Sizes 4-inch through 48-inch.
 - 1. Pipe: AWWA C150 and C151.
 - 2. Fittings
 - (a) Standard: AWWA C110, sizes 4-inch through 48-inch.
 - (b) Compact: AWWA C153, sizes 4-inch through 24-inch.
 - 3. Pipe and Fitting Lining: Cement Mortar, AWWA C104.
 - 4. Pipe and Fitting Coating: Asphaltic, AWWA C151 or C115.
 - 5. Exterior Soil Corrosion Protection for Pipe and Fittings: Polyethylene encasement, AWWA C105.

6. Unrestrained Joints:
 - (a) Push-On Bell and Spigot Joint: AWWA C111.
 - (b) Mechanical Joint: AWWA C111.
7. Restrained Joints:
 - (a) Flanged Joint: AWWA C115.
 - (b) Push-On Bell and Spigot Joint: AWWA C111 with "Field Lok Gasket," sizes 4-inch through 24-inch;"TR Flex," sizes 4-inch through 64-inch or approved equal.
 - (c) Mechanical Joint: AWWA C111 with "Mega Lug," sizes 3-inch through 48-inch. or approved equal.
 - (d) Grooved and Shouldered Joints: AWWA C150, AWWA C151 and AWWA C606. 24-inch maximum size.
8. Couplings:
 - (a) Plain End Pipe to Plain End Pipe: Ductile iron or steel bolted couplings, manufacturer's shop coating with low alloy steel bolts and nuts. Steel couplings to conform to AWWA C219. or approved equal.
 - (b) Plain End Pipe to Flanged Pipe: 1) Ductile iron or steel bolted flanged coupling adapters, manufacturer's shop coating with low alloy steel bolts and nuts. Steel flanged couplings to conform to AWWA C219
- B. PE Pipe: Sizes 4-inch through 64-inch.
 1. Pipe and Fittings: AWWA C906.
 2. Joints:
 - (a) Thermal Butt Fusion: AWWA C906 and pipe manufacturer's recommendations.
 - (b) Flanged joining: AWWA C906 and pipe manufacturer's recommendations.
 - (c) Other: Check with pipe manufacturer.
- C. PVC Pipe: Sizes 4-inch through 48-inch.
 1. Pipe:
 - (a) 4-inch through 12-inch: AWWA C900.
 - (b) 14-inch through 48-inch: AWWA C905.
 2. Fittings: DI conforming to 2.2A above.
 3. Unrestrained Joints:
 - (a) Push-On Bell and Spigot Joint: AWWA C900.

4. Restrained Joints:
 - (a) Push-On Bell and Spigot Joint: or approved equal.
 - (b) Plain End PVC to DI Mechanical Joint: or approved equal.
5. Steel or Ductile Iron Couplings:
 - (a) Plain End Pipe to Plain End Pipe: Ductile iron or steel bolted couplings, manufacturer's shop coating with low alloy steel bolts and nuts. Steel couplings to conform to AWWA C219. or approved equal.
 - (b) Plain End Pipe to DI or Steel Flanged Pipe: Ductile iron or steel bolted flanged coupling adapters, manufacturer's shop coating with low alloy steel bolts and nuts. Steel flanged couplings to conform to AWWA C219. or approved equal.
6. PVC Couplings
 - (a) Unrestrained Plain End to Plain End Pipe: AWWA C900, or approved equal.
 - (b) Restrained Plain End to Plain End Pipe: AWWA C900, or approved equal.
- D. Cement Mortar Lined and Coated Steel Pipe: 6-inch and larger.
 1. Pipe: AWWA C200 and AWWA M11.
 2. Special Sections and Fittings: AWWA C200, C207, C208 and AWWA M11 for all bends, tees, nozzles, closures, etc.
 3. Flanges: AWWA C207. Includes blind flanges.
 4. Linings and Coatings for Pipe, Special Sections and Fittings: Cement Mortar Lining and Coating: AWWA C205.
 - (a) Liquid Epoxy Lining and Coating: AWWA C210.
 - (b) Fusion Bonded Epoxy Lining and Coating: AWWA C213.
 - (c) Coal-Tar Lining and Coating: AWWA C203.
 - (d) Cold-Applied Tape Coatings, Piping: AWWA C214.
 - (e) Cold-Applied Tape Coatings, Specials, Connection and Fittings: AWWA C209.
 - (f) Cold Applied Petrolatum Tape and Petroleum Wax Tape Coatings for the Exterior of Special Sections, Connections, and Fittings for Buried or Submerged Steel Water Pipelines.
 - (g) Aboveground Pipe Coatings: AWWA C218.]
 5. Non-Restrained Joints: AWWA M11.
 - (a) Rubber Gasket: Carnegie-shape rubber gasket as indicated.

6. Restrained Joints: AWWA M11. Where a flanged joint, butt strap or coupling are not indicated, either restrained joint a, or b, as follows, is acceptable, but the selected joint shall be used throughout the project.
 - (a) Rubber Gasket: Carnegie-shape rubber gasket with field welded restraint bar as indicated.
 - (b) Field Lap Welded Slip Joint: As indicated.
 - (c) Field Welded Butt Strap: As indicated.
 - (d) Flanged Joint: AWWA C207 with Type 316L stainless steel bolts and nuts as indicated.
7. Joint Coating for Cement Mortar Lined and Coated Steel Pipe:
 - (a) Field Joint Encasement: Cement mortar contained in fabric lined with closed cell polyethylene foam as indicated. Attach fabric to pipe with Type 316L stainless steel straps as indicated.
8. Non-Restrained Flexible Couplings: Conforming to AWWA C219, with factory applied fusion-bond epoxy coating and Type 316L stainless steel bolts and nuts.
9. Restrained Flexible Couplings: Non-restrained flexible coupling supplemented with a restraining harness as indicated and as follows:
 - (a) Restraining harness design by Contractor's pipe manufacturer using criteria presented in Section 13.10 of AWWA M11.
 - (b) Space harness-lugs and tie bolts equally around the pipe.
 - (c) Type 316L stainless steel harness tie bolts and nuts.
 - (d) Design and dimensions of harness lugs to be modified from that shown in AWWA M11, as necessary, to provide additional height to clear the coupling.
10. Field Coating of Coupling Assemblies: Apply either of the following, flexible tape and mastic or putty coating systems to the all non-restrained or restrained flexible steel couplings.

2.03 HIGH DEFLECTION FITTINGS/BALL JOINTS

- A. Plain End Pipe: Xtra Flex Restrained Joint High Deflection Fittings, 4-inch through 24-inch, or approved equal.
- B. Mechanical or Flanged Joint: Flex 900, 4-inch through 12-inch, or approved equal.

2.04 EXPANSION JOINTS

- A. TR Flex Joints: TR Flex Telescoping Sleeve, 4-inch through 64 inch, or approved equal.
- B. Mechanical or Flanged Joint: Ex-Tend 200, 4-inch through 36-inch, or approved equal.

2.05 FLEXIBLE EXPANSION JOINTS

- A. Plain End to Plain End Pipe: "Xtra Flex," sizes 4-inch through 24-inch, or equal.
- B. Flanged or mechanical Joint: "Flex-Tend," sizes 3-inch through 48-inch, or equal.
- C. Flanged Joint: Starflex, Series 500 or equal.

2.06 GATE VALVES

- A. Provide on lines 10-inch and smaller.
- B. Valves, 3-Inch through 20-Inch: AWWA C509, resilient-seated, non-rising stem, gray or ductile-iron body and bonnet, with bronze or gray or ductile-iron gate, bronze stem and square stem operating nut unless noted otherwise. All bolts, nuts and washers, except operating nut, shall be stainless steel. Stem operating nut to be 2-inches square and open counter-clockwise. Stem extensions shall be installed to bring the stem operating nut to within 2-feet of finish grade where the depth from finish grade to the stem operating nut exceeds 4-feet. Equip valves in pump stations and other interior or vault installations with hand-wheels. Provide protective epoxy interior and exterior coating according to AWWA C550 and manufacturer's recommendations.
- C. Service Line Valves and Fittings, 2-Inch and Smaller: AWWA C800
- D. Valve Box and Cover: 9-inch minimum diameter PCC box with extensions of length required for depth of bury of valve, and cast iron or ductile iron cover with lettering "WATER". Both the box and the cover shall be rated for AASHTO H20 loading.

2.07 BUTTERFLY VALVES

- A. Provide on lines larger than 10-inch.
- B. Valves, 3-Inch through 72-Inch: AWWA C 504, rubber seated, Class 150B cast iron body, cast or ductile iron discs, stainless steel shafts, adjustable field replaceable rubber seats mating against stainless steel seat rings and field-replaceable seals. Flanged or mechanical joint end connections. No wafer type valves allowed. Traveling nut type valve actuators designed for buried service unless noted otherwise. All bolts, nuts and washers, except wrench nut, shall be stainless steel. Wrench nut to be 2-inches square and open counter-clockwise. Stem extensions shall be installed to bring the wrench nut to within 2-feet of finish grade where the depth from finish grade to the wrench nut exceeds 4-feet. Equip valves in pump stations and other interior or vault installations with hand-wheels. Provide protective epoxy interior and exterior coating according to AWWA C550 and manufacturer's recommendations.
- C. Valve Box and Cover: 9-inch minimum diameter PCC box with extensions of length required for depth of bury of valve, and cast iron or ductile iron cover with lettering "WATER". Both the box and the cover shall be rated for AASHTO H20 loading.

2.08 AIR RELEASE, AIR/VACUUM AND COMBINATION AIR VALVES

- A. AWWA C512, specific type of valve, size, details and valve box as indicated.

2.09 BLOW-OFF VALVES

- A. Blow-off valve assemblies, details and boxes as indicated.

2.10 SWING CHECK VALVES

- A. Valves 2-Inch through 24-Inch: AWWA C508, details as indicated.

2.11 BALL VALVES

- A. Valves 6-Inch through 48-Inch: AWWA C507, details as indicated.

2.12 PRESSURE-REGULATING VALVES

- A. Valve: Automatic, pilot-operated, cast-iron body with interior coating according to AWWA C550. 250-psi Working-pressure, bronze pressure-reducing pilot valve and tubing, and means for discharge pressure adjustment. Details as indicated.

2.13 FLOW-REGULATING VALVES

- A. Valve: Automatic, pilot-operated, cast-iron body with interior coating according to AWWA C550. 250-psi working-pressure, bronze pressure-reducing pilot valve and tubing, and means for flow adjustment. Details as indicated.

2.14 SERVICE CONNECTIONS AND WATER METERS

- A. Service connections and water meter details and boxes as indicated.

2.15 REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER

- A. Provide as indicated and as required by State or local agency.
- B. General: AWWA C511, with OS gate valve on inlet and outlet, and strainer on inlet. Include test cocks and pressure-differential relief valve with ASME A112.1.2 air gap fitting located between 2 positive-seating check valves for continuous-pressure application.
- C. Body:
 - 1. 2-Inch and Smaller: Bronze with threaded ends.
 - 2. 2-1/2-Inch and Larger: Bronze, cast iron steel, or stainless steel with flanged ends.
- D. Interior Lining: AWWA C550, epoxy coating for cast iron or steel bodies.
- E. Interior Components: Corrosion-resistant materials.

2.16 DOUBLE CHECK DETECTOR ASSEMBLY

- A. FM approved or UL listed, with OS&Y gate valve on inlet and outlet, and strainer on inlet. Include two positive-seating check valves and test cocks, and bypass with displacement-type water meter, valves, and double-check backflow preventer, for continuous pressure application.

2.17 UNDERGROUND VAULTS/PITS

- A. General: Portland cement concrete, precast or cast-in-place as indicated.
- B. Portland Cement Concrete and Reinforcing Steel: Section 32 05 23 – Cement and Concrete for Exterior Improvements.
- C. Access Openings: As indicated.
- D. External Load: Earth load plus AASHTO H20 live load if located in paved areas.
- E. Lids: Bolt down type.

2.18 TRACER WIRE

- A. General: Minimum #12 AWG stranded copper wire with blue THW, THWN, or THHN rated insulation.

2.19 WARNING TAPE

- A. General: Non-detectable 3-inch warning tape made of solid blue film with continuously printed black-letter message reading "CAUTION—WATER LINE BURIED BELOW."

2.20 PCC THRUST BLOCKS

- A. Portland Cement Concrete and Reinforcing Steel: Section 32 05 23 – Cement and Concrete for Exterior Improvements.

PART 3 - EXECUTION

3.01 PIPE INSTALLATION

- A. General: Install pipe, fittings, and appurtenances utilizing best practices, manufacturer's instructions, and in accordance with the following:
 - 1. DIP: AWWA M41 and AWWA C600.
 - 2. PVC pipe: AWWA M23 and AWWA C605.
 - 3. Steel Pipe: AWWA M11.
- B. Pipe Depth and Trench Configuration: Conform to elevations, profiles and typical trench section(s) indicated.
- C. Excavation, Bedding, Backfill, and Compaction: Section 31 23 33 – Trenching and Backfilling.
- D. Handling: Carefully handle during loading, hauling, unloading and placing operations to avoid breakage or damage. Use strap type slings for lifting and placing; no chains or hooks will be permitted. Comply with manufacturer's recommendations.

- E. Laying: Before lowering pipe into the trench, remove all stakes, debris, loose rock and other hard materials from the bottom of the trench. Lay accurately in conformance with lines and grades indicated. Lay pipe on a bed of bedding material specified and prepared by handwork, dug true to grade. Furnish firm bearing for pipe throughout its entire length with bell holes provided at the ends of each pipe length of sufficient size to permit making up the particular type of joint being used. Adjust pipe to line and grade by scraping away or filling and tamping material under the body of the pipe for the entire pipe length and not by blocking or wedging. After final positioning, hold pipe in place in trench with backfill material placed equally on both sides of the pipe at as many locations as required to hold the pipe section in place.
- F. Curved Alignment: When necessary to conform to the alignment specifically indicated, lay pipe on a curved alignment by means of asymmetrical closure of joints or bending of the pipe barrel. If necessary, use shorter than the standard lengths of pipe to achieve curvature specified. Do not exceed the recommendations of the pipe manufacture for deflections at the joints or pipe bending.
- G. Closure: Close open ends of pipes and appurtenance openings at the end of each days work or when work is not in progress.

3.02 CONNECTING TO EXISTING MAINS

- A. Pressure Tap Connections: Perform in accordance with the requirements of the owner of the system being tapped. Maintain a positive pressure flow from the main being tapped to the tapping device to flush plastic chips, metal ribbons, etc. into the tapping device and not into the pipe being tapped.
- B. Other Connections: As indicated and in accordance with the requirements of the owner of the line being connected to.

3.03 ANCHORAGE INSTALLATION

- A. Mechanically Restrained Joints: Install where indicated for lengths indicated in accordance with manufacturer's instructions.
- B. PCC Thrust Blocks: Install where required and as indicated. Bearing area indicated is to be against undisturbed earth. Allow a minimum of 24-hours curing time before introducing water into the pipeline and allow a minimum of 7-days curing time before pressure testing.

3.04 HIGH DEFLECTION FITTINGS/BALL JOINTS, EXPANSION JOINTS, AND FLEXIBLE EXPANSION JOINTS

- A. Install as indicated and in accordance with the manufacturers recommendations.

3.05 VALVE INSTALLATION

- A. Install all valves in accordance with the manufacturer's instructions and the following:
 - 1. General:
 - (a) Gate Valves: Appendix A of AWWA C509.

(b) Butterfly Valves: Appendix A of AWWA C504.

2. Joints:

(a) Valves on DI, PE and PVC Pipe: Mechanical joint valves for buried locations. Flanged-end valves for installation in vaults/pits.

(b) Valves on Steel Pipe: As indicated for buried locations. Flanged-end valves for installation in vaults/pits.

3.06 SERVICE CONNECTIONS INSTALLATION

A. Install as indicated and in accordance with the requirements of the owner of the system.

3.07 WATER METER INSTALLATION

A. Install as indicated and in accordance with the requirements of the owner of the system.

3.08 REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER INSTALLATION

A. Install as indicated and in accordance with the requirements of the owner of the system and the local health department requirements.

3.09 DOUBLE CHECK DETECTOR ASSEMBLY INSTALLATION

A. Install as indicated and in accordance with the requirements of the owner of the system.

3.10 UNDERGROUND VAULT/PIT INSTALLATION

A. Install as indicated.

B. Excavation and Backfill: Section 31 23 33 – Trenching and Backfilling.

3.11 TRACER WIRE INSTALLATION

A. Install on trench bottom under the vertical projection of the pipe to protect it in all installations.

B. Form a mechanically and electrically continuous line throughout the pipeline, extending to the nearest valve or other pipeline appurtenance designated by the owner of the system or the Owner. Extend the wire up the outside of the valve box/riser and cut a hole that is 8-inches from the top, extend a 12-inch wire lead to the inside of the box. At other pipeline appurtenances, designated by the owner of the system or the Owner, terminate the 12-inch wire lead inside the enclosure.

C. Splice wire with a splicing device consisting of and electro-tin plated seamless copper sleeve conductor. Install as recommended by the manufacturer. Wrap splices and damaged insulation with electrician's tape.

3.12 WARNING TAPE INSTALLATION

A. Install tape approximately 1-foot above and along the centerline of the pipe.

- B. Where tape is not continuous, lap tape ends a minimum of 2-feet.

3.13 HYDROSTATIC PRESSURE AND LEAKAGE TEST

A. General:

1. Provide all necessary materials and equipment, including water.
2. Backfill all trenches sufficient to hold pipe firmly in position.
3. Allow time for thrust blocks to cure prior to testing.
4. Flush all pipes prior to testing to remove all foreign material.
5. Perform pressure and leakage test concurrently.
6. Test pressure: See Subsection titled "System Performance Requirements."
7. Apply test pressure by means of a pump connected to the pipe.
8. Base test pressure on the elevation of the lowest point in the line.
9. Fill each closed valve section or bulk-headed section slowly. Expel air from section being tested by means of permanent air vents installed at high points or by means of temporary corporation cocks installed at such points. Remove and plug the temporary corporation cocks at the conclusion of the test.
10. Allow water to stand in the pipe for 24 hours before test pressure is applied.
11. Allow the system to stabilize at the test pressure before conducting the leakage test.
12. Do not operate valves in either the opening or closing direction at differential pressures above the valves rated pressure.
13. Maintain test pressure as specified for type of pipe being tested.
14. Pressure Test: Examine any exposed pipe, fittings, valves, hydrants and joints during the test, if no leaks are observed the section of line has passed the pressure test. If leaks are observed, repair any damaged or defective pipe, fittings, valves, or hydrants, and repeat the pressure test.
15. Leakage Test: Perform as specified hereafter for the type of pipe being installed.

- B. DIP Leakage Test: Perform in accordance with AWWA C600. Selected requirements of AWWA C600 are repeated as follows:

1. Maintain the test pressure, +/- 5 psi, for a minimum of two hours.
2. No piping will be accepted if the leakage is greater than that determined by the following formula:

$$L = (S \times D \times P^{1/2}) / 133,200$$

L = Allowable leakage, gallons per hour.

S = Length of pipe tested, feet.

D = Nominal diameter of pipe, inches.

P = Average test pressure during the leakage test, pounds per square inch (gauge).

C. PE Pipe Leakage Test:

1. Apply the test pressure and allow the pipe to stand, without makeup pressure, for sufficient time to allow for diametric expansion or pipe stretching to stabilize, approximately two to three hours.
2. After the above stabilization has occurred, return the section being tested to the test pressure. Hold the test pressure for one to three hours. If the pressure in the test section drops, and it is determined the drop may be the result of expansion resulting from increasing temperature, a limited amount of additional water may be added to bring the pressure back to the test pressure. Allowable amounts of make-up water, to compensate for expansion due to increasing temperature, are as shown in the following table. Make-up water is only allowed during this final test period and not during the initial stabilization described in the previous paragraph. If the additional water added is less than the allowable shown in the table and there are no visual leaks or significant pressure drops, the tested section passes the test.
3. Nominal Allowance for Expansion

Pipe Size (in.) Test	(U.S. Gals./100 Feet of Pipe)		
	1-Hour Test	2-Hour Test	3-Hour
3	0.10	0.15	0.25
4	0.13	0.25	0.40
6	0.30	0.60	0.90
8	0.50	1.0	1.50
10	0.75	1.3	2.1
<u>11</u>	<u>1.0</u>	<u>2.0</u>	<u>3.0</u>
12	1.1	2.3	3.4
14	1.4	2.8	4.2
16	1.7	3.3	5.0
18	2.2	4.3	6.5
20	2.8	5.5	8.0
<u>22</u>	<u>3.5</u>	<u>7.0</u>	<u>10.5</u>
24	4.5	8.9	13.3
28	5.5	11.1	16.8
32	7.0	14.3	21.5
36	9.0	18.0	27.0
40	11.0	22.0	33.0
<u>48</u>	<u>15.0</u>	<u>27.0</u>	<u>43.0</u>

- D. PVC Pipe Leakage Test: Perform in accordance with AWWA M23. Selected requirements of AWWA M23 are repeated as follows:

1. Maintain the test pressure, +/- 5 psi, for a minimum of two hours.
2. No piping will be accepted if the leakage is greater than that determined by the following formula:

$$L = (N \times D \times P^{1/2}) / 7,400$$

L = Allowable leakage, gallons per hour.

N = Number of joints in the length of the pipeline tested.

D = Nominal diameter of pipe, inches.

P = Average test pressure during the leakage test, pounds per square inch (gauge).

- E. Cement Mortar Lined and Coated Steel Pipe Leakage Test: Perform in accordance with AWWA M11. Selected requirements of AWWA M11 are repeated as follows:

1. Maintain the test pressure, +/- 5 psi, for a minimum of two hours.
2. There shall be no significant leakage for pipe with welded joints or mechanical couplings.
3. For pipe joined with O-ring rubber gaskets, a leakage of 25 gallons per inch of diameter per mile per 24-hours is allowed.

3.14 DISINFECTION

- A. All New Pipelines shall be disinfected in accordance with one of the three methods specified in AWWA C651 and the following:

1. Disinfect after pressure and leakage test have been performed and accepted.
2. The method used shall be at the Contractor's option, unless specified by the owner of the water system.
3. Engage the services of a commercial testing laboratory, approved by the owner of the water system, to perform the bacteriological tests specified in Section 5.1 of AWWA C651. Direct the testing laboratory to send the original report of the bacteriological testing to the owner of the water system. Should the laboratory report show that any sample taken was not acceptable, repeat the sterilization process shall until a satisfactory sterilization is accomplished.
4. Lawfully dispose of the chlorinated water.

END OF SECTION

SECTION 33 30 00

SANITARY SEWERAGE UTILITIES

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Roadway and/or site sanitary gravity sewers and force mains up to 5 feet of any on-site building.

1.02 RELATED SECTIONS

- A. Section 31 23 33 – Trenching and Backfilling.
- B. Section 32 05 23 – Cement and Concrete for Exterior Improvements.
- C. Section 33 05 16 – Utility Structures.

1.03 RELATED DOCUMENTS

A. AASHTO:

- 1. M 252: Standard Specification for Corrugated Polyethylene Drainage Pipe.
- 2. M 294: Standard Specification for Corrugated Polyethylene Pipe, 300- to 1500-mm (12- to 60-inch.) Diameter.

B. ASTM:

- 1. A 615/A615M: Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
- 2. A 674: Standard Practice for Polyethylene Encasement for Ductile Iron Pipe for Water and Other Liquids.
- 3. C 443: Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets.
- 4. C 1173: Standard Specification for Flexible Transition Couplings for Underground Piping Systems.
- 5. D 1785: Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
- 6. D 2235: Standard Specification for Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings.
- 7. D 2321: Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.
- 8. D 2564: Standard Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC)

Plastic Piping Systems.

9. D 2751: Acrylonitrile-Butadiene-Styrene (ABS) Sewer Pipe and Fittings.
10. D 3034: Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
11. D 4101: Standard Specification for Propylene Injection and Extrusion Materials.
12. F 477: Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.
13. F 656: Standard Specification for Primers for Use in Solvent Cement Joints of Poly(Vinyl Chloride) (PVC) Plastic Pipe and Fittings.
14. F 679: Standard Specification for Poly(Vinyl Chloride) (PVC) Large Diameter Plastic Gravity Sewer Pipe and Fittings.
15. F-1336: Standard Specification for Poly(Vinyl Chloride) (PVC) Gasketed Sewer Fittings.

C. AWWA:

1. C104: Cement-Mortar Lining for Ductile-Iron Pipe and Fittings.
2. C105: Polyethylene Encasement for Ductile-Iron Pipe Systems.
3. C110: Ductile-Iron and Gray-Iron Fittings.
4. C111: Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
5. C150: Thickness design of Ductile-Iron Pipe.
6. C151: Ductile-Iron Pipe, Centrifugally Cast.
7. C153: Ductile-Iron Compact Fittings.
8. M41: Ductile Iron Pipe and Fittings.

D. Caltrans Standard Specifications.

1. Section 65, Concrete Pipe.

E. California Building Code.

F. Section 1806A.11 – Pipes and Trenches.

G. California Plumbing Code.

1.04 DEFINITIONS

- A. AASHTO: American Association of State Highway and Transportation Officials.
- B. ABS: Acrylonitrile-butadiene-styrene.

- C. ASTM: American Society for Testing Materials.
- D. AWWA: American Water Works Association.
- E. HDPE: High-density polyethylene.
- F. PE: Polyethylene.
- G. DIP: Ductile iron pipe.
- H. PVC: Polyvinyl Chloride.
- I. RCP: Reinforced concrete pipe.
- J. NPS: Nominal pipe size.

1.05 SUBMITTALS

- A. Follow submittal procedures outlined in Section 01 33 00 – Submittal Procedures.
- B. Product data for the following:
 - 1. Piping materials and fittings.
 - 2. Special pipe couplings.
 - 3. Joint sealants.
 - 4. Sewage air relief valves.
- C. Shop drawings: Include plans, elevations, details and attachments for the following:
 - 1. Force main piping access openings.
- D. Design Mix Reports and Calculations: For each class of cast-in-place concrete.
- E. Field Test Reports: Indicate and interpret test results for compliance with performance.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Do not store plastic pipe and fittings in direct sunlight.
- B. Protect pipe, fittings, and seals from dirt and damage.
- C. Handle precast concrete pipe and other precast structures according to manufacturer's written instructions.
- D. Protect imported bedding and backfill material from contamination by other materials.

PART 2 - PRODUCTS

2.01 PIPING MATERIALS FOR GRAVITY FLOW

- A. ABS Pipe and Fittings: 4-inch through 12 inch, ASTM D 2751, SDR 26. Bell and spigot joints.
 - 1. Bell and Spigot Joint Gasket: Elastomeric seal, ASTM F 477.
- B. DIP: Sizes 4-inch through 48-inch.
 - 1. Pipe: AWWA C150 and C151.
 - 2. Pressure Class: Minimum pressure class for size indicated.
 - 3. Fittings
 - (a) Standard: AWWA C110, sizes 4-inch through 48-inch.
 - (b) Compact: AWWA C153, sizes 4-inch through 24-inch.
 - 4. Pipe and Fitting Lining: Cement Mortar, AWWA C104.
 - 5. Pipe and Fitting Coating: Asphaltic, AWWA C151 or C115.
 - 6. Exterior Soil Corrosion Protection for Pipe and Fittings: Polyethylene encasement, AWWA C105.
 - 7. Joints:
 - (a) Push-On Bell and Spigot Joint: AWWA C111.
 - (b) Mechanical Joint: AWWA C111.
 - (c) Flanged joint. AWWA C115.
- C. PE Pipe and Fittings (HDPE): 4-inch through 10-inch, AASHTO M252 Type S, smooth interior and corrugated exterior. Bell and spigot joints.
 - 1. Bell and Spigot Joint Gasket: Elastomeric seal, ASTM F 477.
 - 2. Couplings: AASHTO M 252, corrugated band type, engage a minimum of 4 corrugations, 2 on each side of pipe joint.
- D. PE Pipe and Fittings (HDPE): 12-inch through 48-inch, AASHTO M 294. Type S, smooth interior and corrugated exterior. Bell and spigot joints.
 - 1. Bell and Spigot Joint Gasket: Elastomeric seal, ASTM F 477.
 - 2. Couplings: AASHTO M 252, corrugated band type, engage a minimum of 4 corrugations, 2 on each side of pipe joint.
- E. PVC Pipe:
 - 1. Pipe:
 - (a) 4-inch through 15-inch: ASTM D 3034, SDR 26. Bell and spigot joints.

- (b) 18 inch through 36-inch: ASTM F 679, T-1 wall. Bell and spigot joints.
- 2. Fittings:
 - (a) 4-inch through 27-inch: ASTM F 1336.
 - (b) 30-inch through 36-inch: ASTM D 3034, SDR 26
- 3. Joint Gasket: Elastomeric seal, ASTM F 477.
- F. Reinforced Concrete Pipe: Designated by Class, rubber gasketed joints, Type II or V cement.
 - 1. Circular Reinforced Concrete Pipe, Described or Chosen by Class: Caltrans Standard Specification.
 - 2. Oval shaped (Elliptical) Reinforced Concrete Pipe: Caltrans Standard Specification.
 - 3. Rubber Gasketed Joints: Caltrans Standard Specification Section 65-2.02F.
- 2.02 PIPING MATERIALS FOR FORCE MAINS
 - A. DIP: See Section 33 10 00 – Water Utilities.
 - B. PE Pipe: See Section 33 10 00 – Water Utilities.
 - C. PVC Pipe: See Section 33 10 00 – Water Utilities.
- 2.03 SPECIAL PIPE COUPLINGS
 - A. Gravity Piping: ASTM C 1173. Rubber or elastomeric sleeve and band assembly fabricated to match outside diameters of pipes to be joined.
 - B. Force Main piping: See Section 33 10 00 – Water Utilities.
- 2.04 MANHOLES AND CLEANOUTS
 - A. See Section 33 05 16 – Utility Structures.
- 2.05 SEWAGE AIR RELIEF VALVE ASSEMBLY FOR FORCE MAINS
 - A. General: As indicated.
- 2.06 THRUST BLOCKS FOR FORCE MAINS
 - A. General: Location, configuration bearing area, etc. as indicated.
 - B. Portland Cement Concrete: Section 32 05 23 – Concrete for Exterior Improvements.

PART 3 - EXECUTION

3.01 GRAVITY PIPE INSTALLATION

- A. General: Install pipe, fittings, and appurtenances utilizing best practices, manufacturer's instructions, and in accordance with Section 6 and 7 of ASTM D 2321 for plastic pipe, Caltrans Standard Specification Section 65-2.03C for reinforced concrete pipe and chapter 11.3.3 of AWWA M41 for ductile iron pipe.
- B. Pipe Depth and Trench Configuration: Conform to typical trench section(s) indicated.
- C. Excavation, Bedding, Backfill, and Compaction: Section 31 23 33 – Trenching and Backfilling.
- D. Handling: Carefully handle during loading, hauling, unloading and placing operations to avoid breakage or damage. Use strap type slings for lifting and placing; no chains or hooks will be permitted. Comply with the manufacturer's recommendations.
- E. Laying: Before lowering pipe into the trench, remove all stakes, debris, loose rock and other hard materials from the bottom of the trench. Lay accurately in conformance with lines and grades indicated. Start laying the pipeline at the low end and proceed upstream. Lay bell and spigot pipe with the bell end facing upstream. Lay pipe on a bed prepared by handwork, dug true to grade. Furnish firm bearing for pipe throughout it's entire length with bell holes provided at the ends of each pipe length of sufficient size to permit making up the particular type of joint being used. Adjust pipe to line and grade by scraping away or filling and tamping material under the body of the pipe for the entire pipe length and not by blocking or wedging. After final positioning, hold pipe in place in trench with backfill material placed equally on both sides of the pipe at as many locations as required to hold the pipe section in place.
- F. Curved Alignment: When necessary to conform to the alignment specifically indicated, lay pipe on a curved alignment by means of asymmetrical closure of joints or bending of the pipe barrel. Use shorter lengths of pipe than the standard length if necessary to achieve curvature specified. Do not exceed the recommendations of the pipe manufacture for deflections at the joints or pipe bending.
- G. Closure: Close open ends of pipes and appurtenance at the end of each days work or when work is not in progress.

3.02 FORCE MAIN PIPE INSTALLATION

- A. General: See Section 33 10 00 – Water Utilities.

3.03 SPECIAL PIPE COUPLINGS

- A. General: Use where required to join piping and no other appropriate method is specified. Do not use instead of specified joining methods.
- B. Installation: Per manufacturer's instructions.

3.04 AIR RELIEF VALVE ASSEMBLY INSTALLATION

- A. General: Install as indicated.

3.05 TESTING OF GRAVITY PIPING MAINS

- A. Obstructions: After backfilling and compacting, but before paving or other surface improvements, test sewer for obstructions either by rodding or by the sewer ball method. Provide for intercepting all grit, rocks and other flushed debris to keep debris from entering the existing system.
- B. At the option of the Contractor, either the following hydrostatic or air test shall be performed.
- C. Hydrostatic Test:
 - 1. Test after backfilling to finish grade or pavement structural section subgrade in paved areas.
 - 2. Test sewer mains between successive manholes by closing the lower end of the sewer main to be tested and the inlet sewer main of the upper manhole with stoppers.
 - 3. Fill pipe and manholes with water to a point four feet below the ground surface of the upper manhole, but in no case less than four feet above the pipe invert. If ground water is present, the water surface at the upper manhole shall be at least four feet above the level of the ground water.
 - 4. Fill piping at least one hour prior to testing.
 - 5. Test piping at least two hours by maintaining the head specified above with measured additions of water. The sum of these additions of water, in the two-hour test period, shall be the leakage amount.
 - 6. The maximum allowable head of water above any portion of sewer being tested shall be 15-feet. Where the difference in elevation between successive manholes exceeds 15-feet, a test tee shall be installed between manholes, and the testing shall be carried on between the tee and the manhole.
 - 7. The allowable leakage shall not exceed 0.1-gallons per minute per inch diameter, per 1000-feet of sewer main being tested.
 - 8. If the leakage exceeds the above amount, determine the cause and remedy it prior to retesting.
 - 9. If the leakage is less than the allowable, but leaks are observed, repair the observed leaks.
- D. Air Test:
 - 1. Test after backfilling to finish grade or pavement structural section subgrade in paved areas.
 - 2. Apply to each length between adjacent manholes.
 - 3. Supply pressure gauge with minimum divisions of 0.10-psi and with an accuracy of +/- 0.04-psi. When requested by the Owner, provide certification that the gauge has been tested for accuracy within the last six months by a reliable testing firm.

4. Pressurize the test section to 3.5-psi, and then hold the pressure above 3.0-psi during a saturation period of at least 5 minutes. At the end of the saturation period, note the pressure, which must be a minimum of 3.0-psi, and begin the timed period. If the pressure drops 0.5-psi in less than the time given in the following table the section of pipe has not passed the test.

5.

<u>PipeSize</u>	<u>Minimum Time Allowed</u> <u>for Pressure to Drop 0.5-PSI</u>
-----------------	--------------------------------------------------------------------

4"	125 seconds
6"	185 seconds
8"	245 seconds
10"	310 seconds
12"	370 seconds
15"	460 seconds
18"	555 seconds
21"	10 minutes
24"	12 minutes
27"	14 minutes
30"	16 minutes
36"	18 minutes
42"	20 minutes
48"	23 minutes
54"	26 minutes

6. If the time for the pressure to drop 0.5-psi is 125% or less of the time indicated, the line shall immediately be re-pressurized to 3.0-psi and the test repeated. If, during the 5-minute saturation period, the pressure drops less than 0.5-psi after the initial pressurization and air is not added, the section undergoing the test shall have passed.
7. If the test did not pass, find and repair the leak to the satisfaction of the Owner.
8. When the prevailing ground water is above the line being tested the air pressure shall be increased 0.43-psi for each foot the water table is above the invert of the pipe at the highest manhole.

3.06 TESTING OF LATERALS

- A. At the option of the Contractor, either the following hydrostatic or air test shall be performed.
- B. Hydrostatic Test:
 - 1. Test laterals before backfilling.
 - 2. Plug lateral at its ends and fill with water through the cleanouts.
 - 3. Maintain the water level in the cleanouts as high as possible throughout the test period.
 - 4. One hour after filling with water, examine the lateral for leakage.
 - 5. Repair all leaks to the satisfaction of the Owner.
 - 6. Do not backfill the trench until testing and repairs of the lateral are complete, and approved by the Owner.
 - 7. Following approval of the Owner, remove all plugs, dispose of the water and complete the connection to the main.
- C. Air Test
 - 1. Test after backfilling to finish grade or pavement structural section subgrade in paved areas.
 - 2. Test in accordance with subsection above titled "Testing of Gravity Piping Mains," paragraph titled "Air Test."

3.07 HYDROSTATIC AND LEAKAGE TESTING OF FORCE MAINS

- A. General: Perform hydrostatic and leakage test in accordance with Section 33 10 00 – Water Utilities.

END OF SECTION

SECTION 33 40 00

STORM DRAINAGE UTILITIES

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Roadway and/or site storm drainage up to 5-feet of any on-site building.

1.02 RELATED DOCUMENTS

A. AASHTO:

- 1. M 252: Standard Specification for Corrugated Polyethylene Drainage Pipe.
- 2. M 294: Standard Specification for Corrugated Polyethylene Pipe, 300- to 1500-mm (12- to 60-in.) Diameter.

B. ASTM:

- 1. A 74: Standard Specification for Cast Iron Soil Pipe and Fittings.
- 2. A 615/A615M: Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
- 3. C 443: Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets.
- 4. C 564: Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings.
- 5. C 1173: Standard Specification for Flexible Transition Couplings for Underground Piping Systems.
- 6. D 1785: Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
- 7. D 2235: Standard Specification for Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings.
- 8. D 2321: Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity Flow Applications.
- 9. D 2564: Standard Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems.
- 10. D 2751: Acrylonitrile-Butadiene-Styrene (ABS) Sewer Pipe and Fittings.
- 11. D 3034: Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
- 12. D 4101: Standard Specification for Polypropylene Injection and Extrusion Materials.
- 13. F 477: Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.

14. F 656: Standard Specification for Primers for Use in Solvent Cement Joints of Poly(Vinyl Chloride) (PVC) Plastic Pipe and Fittings.
15. F 679: Standard Specification for Poly(Vinyl Chloride) (PVC) Large Diameter Plastic Gravity Sewer Pipe and Fittings.
16. F-1336: Standard Specification for Poly(Vinyl Chloride) (PVC) Gasket Sewer Fittings.

C. AWWA:

1. C104: Cement-Mortar Lining for Ductile Iron Pipe and Fittings.
2. C105: Polyethylene Encasement for Ductile-Iron Pipe Systems.
3. C110: Ductile-Iron and Gray-Iron Fittings.
4. C111: Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
5. C150: Thickness design of Ductile-Iron Pipe.
6. C151: Ductile-Iron Pipe, Centrifugally Cast.
7. C153: Ductile-Iron Compact Fittings.
8. M41: Ductile Iron Pipe and Fittings.

D. Caltrans Standard Specifications:

1. Concrete Pipe.
2. Corrugated Metal Pipe.
3. Miscellaneous Drainage Facilities.
4. Slope Protection.

E. Caltrans Standard Plans:

1. Metal and Plastic Flared End Sections.
2. Concrete Flared End Sections.
3. Corrugated Metal Pipe Coupling Details No.1, Annular Coupling Band Bar and Strap and Angle Connections.
4. Corrugated Metal Pipe Coupling Details No. 2, Hat Band Coupler and Flange Details.
5. Corrugated Metal Pipe Coupling Details No. 3, Helical and Universal Couplers.
6. Corrugated Metal Pipe Coupling Details No. 4, Hugger Coupling Bands.
7. Corrugated Metal Pipe Coupling Details No. 5, Standard Joint.
8. Corrugated Metal Pipe Coupling Details No. 6, Positive Joint.
9. Corrugated Metal Pipe Coupling Details No. 7, Downdrain.

- 10. Slotted Corrugated Steel Pipe Drain Details.
- 11. Slotted Corrugated Steel Pipe Drain Details.

- F. California Building Code:
- G. Section for Pipes and Trenches.
- H. Section for Gratings.
- I. California Plumbing Code.

1.03 DEFINITIONS

- A. AASHTO: American Association of State Highway and Transportation Officials.
- B. ABS: Acrylonitrile-butadiene-styrene.
- C. ASTM: American Society for Testing Materials.
- D. AWWA: American Water Works Association.
- E. CMP: Corrugated metal pipe.
- F. DIP: Ductile iron pipe.
- G. HDPE: High-density polyethylene.
- H. NPS: Nominal pipe size.
- I. PE: Polyethylene.
- J. PVC: Polyvinyl chloride.
- K. RCP: Reinforced concrete pipe.

1.04 SUBMITTALS

- A. Follow submittal procedures outlined in Section 01 33 00 – Submittal Procedures.
- B. Product Data Shop Drawings, Etc.: For the following:
 - 1. Piping materials and fittings.
 - 2. Special pipe couplings.
 - 3. Polymer-concrete, channel drainage systems (trench drains).
 - 4. Joint sealants.
 - 5. Plastic area drains.
 - 6. Precast concrete catch basins, inlets, curb inlets, and area drains, including frames and grates.
 - 7. Concrete, metal and plastic flared end sections.

- C. Design Mix Reports and Calculations: For each class of cast in place concrete.
- D. Field Test Reports: Indicate and interpret test results for compliance with performance.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Do not store plastic structures, pipe and fittings in direct sunlight.
- B. Protect pipe, fittings, and seals from dirt and damage.
- C. Handle precast concrete pipe and other precast structures according to manufacturer's written instructions.
- D. Protect imported bedding.
- E. Guard and backfill material from contamination by other materials.

PART 2 - PRODUCTS

2.01 PIPING MATERIALS

- A. ABS Pipe and Fittings: Smaller than 4-inch, ASTM D 2751, SDR 35. Solvent cement joints.
 - 1. Solvent Cement: ASTM D 2235.
- B. ABS Pipe and Fittings: 4-inch through 12 inch, ASTM D 2751, SDR 35. Bell and spigot joints.
 - 1. Bell and Spigot Joint Gasket: Elastomeric seal, ASTM F 477.
- C. Cast Iron Pipe and Fittings: Hub and spigot, 2-inch through 15-inch, ASTM A74, service class.
 - 1. Gaskets: ASTM 564, rubber, compression type, thickness to match class of pipe.
- D. Corrugated Metal Pipe: per Caltrans Standard Specification
 - 1. Bituminous Coating: per Caltrans Standard Specification.
 - 2. Bituminous Lining: per Caltrans Standard Specification.
 - 3. Bituminous Pavings: per Caltrans Standard Specification.
 - 4. Corrugated Aluminum Pipe: per Caltrans Standard Specification.
 - 5. Corrugated Steel Pipe: per Caltrans Standard Specification.
 - 6. Slotted Corrugated Steel Pipe: per Caltrans Standard Specification.
 - 7. Details: per Caltrans Standard Plans
- E. DIP: Sizes 4-inch through 48-inch.
 - 1. Pipe: AWWA C150 and C151.
 - 2. Pressure Class: Minimum pressure class for size indicated.

3. Fittings:
 - (a) Standard: AWWA C110, sizes 4-inch through 48-inch.
 - (b) Compact: AWWA C153, sizes 4-inch through 24-inch.
4. Pipe and Fitting Lining: Cement Mortar, AWWA C104.
5. Pipe and Fitting Coating: Asphaltic, AWWA C151 or C115.
6. Exterior Soil Corrosion Protection for Pipe and Fittings: Polyethylene encasement, AWWA C105.
7. Joints:
 - (a) Push-On Bell and Spigot Joint: AWWA C111.
 - (b) Mechanical Joint: AWWA C111.
 - (c) Flanged joint. AWWA C115.
- F. Reinforced Concrete Pipe: Designated by Class, rubber gasketed joints.
 1. Circular Reinforced Concrete Pipe: per Caltrans Standard Specification.
 2. Oval shaped (Elliptical) Reinforced Concrete Pipe: per Caltrans Standard Specification.
 3. Reinforced Concrete Pipe Arch: per Caltrans Standard Specification.
 4. Rubber Gasketed Joints: per Caltrans Standard Specification.
- G. PE Pipe and Fittings: 4-inch through 10-inch, AASHTO M 252 Type S, smooth interior and corrugated exterior. Bell and spigot joints.
 1. Bell and Spigot Joint Gasket: Elastomeric seal, ASTM F 477.
 2. Couplings: AASHTO M 252, corrugated band type. Engage a minimum of 4 corrugations, 2 on each side of pipe joint.
- H. PE Pipe and Fittings: 12-inch through 48-inch, AASHTO M 294. Type S, smooth interior and corrugated exterior. Bell and spigot joints.
 1. Bell and Spigot Joint Gasket: Elastomeric seal, ASTM F 477.
 2. Couplings: AASHTO M 252, corrugated band type. Engage a minimum of 4 corrugations, 2 on each side of pipe joint.
- I. PVC Pipe and Fittings-Smaller than 4-Inch: ASTM D1785, Schedule 40.
 1. Joints: Solvent Cement, ASTM D 2564. Include primer according to ASTM F656.
- J. PVC Pipe and Fittings, 4-Inch and Larger
 1. Pipe:
 - (a) 4-inch through 15-inch: ASTM D 3034, SDR 35. Bell and spigot joints.

- (b) 18 inch through 36-inch: ASTM F 679, T-1 wall. Bell and spigot joints.
 - 2. Fittings:
 - (a) 4-inch through 27-inch: ASTM F 1336.
 - (b) 30-inch through 36-inch: ASTM D 3034, SDR 35
 - 3. Joint Gasket: Elastomeric seal, ASTM F 477.
- 2.02 PIPE ANCHORS
- A. Section 32 05 23 – Cement and Concrete for Exterior Improvements.
- 2.03 SPECIAL PIPE COUPLINGS
- A. Plastic, Cast Iron and Ductile Iron Pipe: ASTM C 1173, rubber or elastomeric sleeve and band assembly fabricated to match outside diameters of pipes to be joined.
 - B. Reinforced Concrete Pipe: Portland cement concrete collar as indicated.
 - C. Section 32 05 23 – Cement and Concrete for Exterior Improvements.
- 2.04 CURB INLETS, CATCH BASINS, DROP INLETS, AREA DRAINS, ETC.
- A. General: Size, shape, configuration, depth, etc. of structure and frame, grate, or cover shall be as indicated.
 - B. Section 32 05 23 – Cement and Concrete for Exterior Improvements.
 - C. Precast Structure: Rate for AASHTO H20 loading in paved areas.
 - D. Steps: ASTM C 478 or AASHTO M 199. Manufacture from deformed, ½-inch steel reinforcement rod complying with ASTM A 615 and encased in polypropylene complying with ASTM D4101. Include pattern designed to prevent lateral slippage off step.
 - E. Frames, Grates and Covers: per Caltrans Standard Specification.
 - 1. Galvanize steel frames, grates and covers.
 - 2. Grates and covers shall be non-rocking, bolt-down type.
 - 3. Rate for AASHTO H20 loading in paved areas.
- 2.05 MANHOLES AND CLEANOUTS
- A. See Section 33 05 16 – Utility Structures.
- 2.06 POLYMER-CONCRETE TRENCH DRAINS
- A. General: Modular system of precast, polymer-concrete channel sections, grates, and appurtenances; designed so grates fit into channel recesses without rocking or rattling. Include number of units required to form total length required.
 - B. Include the following components:

1. Channel Sections: Interlocking-joint, precast modular units with end caps. Inside width as indicated with deep, rounded bottom, with built in slope or flat invert as indicated and outlets in number, sizes, and locations indicated. Include extension sections necessary for required depth.
 2. Frame and Grate: Gray iron, ductile iron or galvanized steel as indicated. Where drain is located in traffic areas, rate for AASHTO H20 loading.
- C. Locking Mechanism: Manufacturer's standard device for securing grates to channel sections.
- 2.07 METAL, CONCRETE OR PLASTIC FLARED END SECTIONS
- A. General: Caltrans Standard Specification and Caltrans Standard Plans.
- 2.08 SLOPE PROTECTION
- A. Rock Slope Protection: Caltrans Standard Specification.
1. Class: *[Select Class applicable to the Project.]*
 2. Fabric: Caltrans Standard Specification.
- B. Concrete/Shotcrete Slope Protection: Caltrans Standard Specification.
1. Bar Reinforcement: Caltrans Standard Specification, minimum Grade 40.
 2. Welded Wire Fabric: Caltrans Standard Specification. Use 6 x 6-W1.4 xW1.4 unless otherwise indicated.
- C. Concreted-Rock Slope Protection: Caltrans Standard Specification.
1. Class: *[Select Class applicable to the Project.]*
- D. Sacked Concrete Slope Protection.
1. Concrete: Caltrans Standard Specification.
 2. Sacks: 10 ounce burlap measuring approximately 19.5-inches by 36 inches when empty and laid flat.
- 2.09 CONCRETE/SHOTCRETE DITCH LINING
- A. General: Caltrans Standard Specification.
1. Bar Reinforcement: Caltrans Standard Specification, minimum Grade 40.
 2. Welded Wire Fabric: Caltrans Standard Specification. Use 6 x 6-W1.4 xW1.4 unless otherwise indicated.

PART 3 - EXECUTION

3.01 PIPE INSTALLATION

- A. General: Install pipe, fittings, and appurtenances utilizing best practices, manufacturer's instructions, and in accordance with Section 6 and 7 of ASTM D 2321 for plastic pipe, Caltrans Standard Specification Section 65-2.03C for reinforced concrete pipe, per Caltrans Standard Specification and chapter 11.3.3 of AWWA M41 for cast iron and ductile iron pipe.
- B. Pipe Depth and Trench Configuration: Conform to typical trench section(s) indicated.
- C. Excavation, Bedding, Backfill, and Compaction: Section 31 23 33 – Trenching and Backfilling.
- D. Handling: Carefully handle during loading, hauling, unloading and placing operations to avoid breakage or damage. Use strap type slings for lifting and placing; no chains or hooks will be permitted. Comply with manufacturer's recommendations.
- E. Laying: Before lowering pipe into the trench, remove all stakes, debris, loose rock and other hard materials from the bottom of the trench. Lay accurately in conformance with lines and grades indicated. Start laying the pipeline at the low end and proceed upstream. Lay bell and spigot pipe with the bell end facing upstream. Lay pipe on a bed prepared by handwork, dug true to grade. Furnish firm bearing for pipe throughout it's entire length with bell holes provided at the ends of each pipe length of sufficient size to permit making up the particular type of joint being used. Adjust pipe to line and grade by scraping away or filling and tamping material under the body of the pipe for the entire pipe length and not by blocking or wedging. After final positioning, hold pipe in place in trench with backfill material placed equally on both sides of the pipe at as many locations as required to hold the pipe section in place.
- F. Curved Alignment: When necessary to conform to the alignment specifically indicated, lay pipe on a curved alignment by means of asymmetrical closure of joints or bending of the pipe barrel. Use shorter lengths of pipe than the standard length if necessary to achieve curvature specified. Do not exceed the recommendations of the pipe manufacture for deflections at the joints or pipe bending.
- G. Closure: Close open ends of pipes and appurtenance openings at the end of each days work or when work is not in progress.

3.02 INSTALLATION OF PIPE ANCHORS

- A. Install at location, configuration and details shown on the Plans.

3.03 SPECIAL PIPE COUPLINGS

- A. General: Use where required to join piping and no other appropriate method is specified. Do not use instead of specified joining methods.
- B. Installation: Per manufacturer's instructions.

3.04 INSTALLATION OF CURB INLETS, CATCH BASINS, DROP INLETS, AREA DRAINS, ETC.

- A. Excavation, Bedding, Backfill, and Compaction: Section 31 23 33 – Trenching and Backfilling.
- B. Poured in Place Structures: Install as indicated and Caltrans Standard Specification Section 51.
 - 1. Shape bottoms to convey flows as indicated.

C. Precast Structures: Install as indicated.

1. Seal all joints and pipe entrances and exits.
2. Place concrete in bottom and shape to convey flows as indicated.

3.05 POLYMER-CONCRETE TRENCH DRAIN INSTALLATION

- A. Excavation, Bedding, Backfill, and Compaction: Section 31 23 33 – Trenching and Backfilling.
- B. Install: As indicated and in accordance with the manufacturer's instructions.

3.06 CONCRETE OR PLASTIC FLARED END SECTION INSTALLATION

- A. Install: As indicated.

3.07 SLOPE PROTECTION PLACEMENT

- A. Rock Slope Protection: Caltrans Standard Specification and as indicated.
1. Use Method B Placement unless otherwise indicated. If Method A is used, then refer to Caltrans Standard Specification
- B. Concrete/Shotcrete Slope Protection: Caltrans Standard Specification.
- C. Concreted-Rock Slope Protection: Caltrans Standard Specification.
1. Use Method B Placement unless otherwise indicated. If Method A is used, then refer to Caltrans Standard Specification.
- D. Sacked Concrete Slope Protection.
1. Detailed configuration: As indicated.
 2. Use one cubic foot of concrete per sack.
 3. Locate headers and stretchers as indicated.
 4. Headers: Folded end to bank.
 5. Stretchers: Folded ends are not to be adjacent.
 6. Place no more than four vertical courses until initial set has taken place in first course.

3.08 CONCRETE/SHOTCRETE DITCH LINING PLACEMENT

- A. Concrete/Shotcrete Slope Protection: Caltrans Standard Specification.

END OF SECTION